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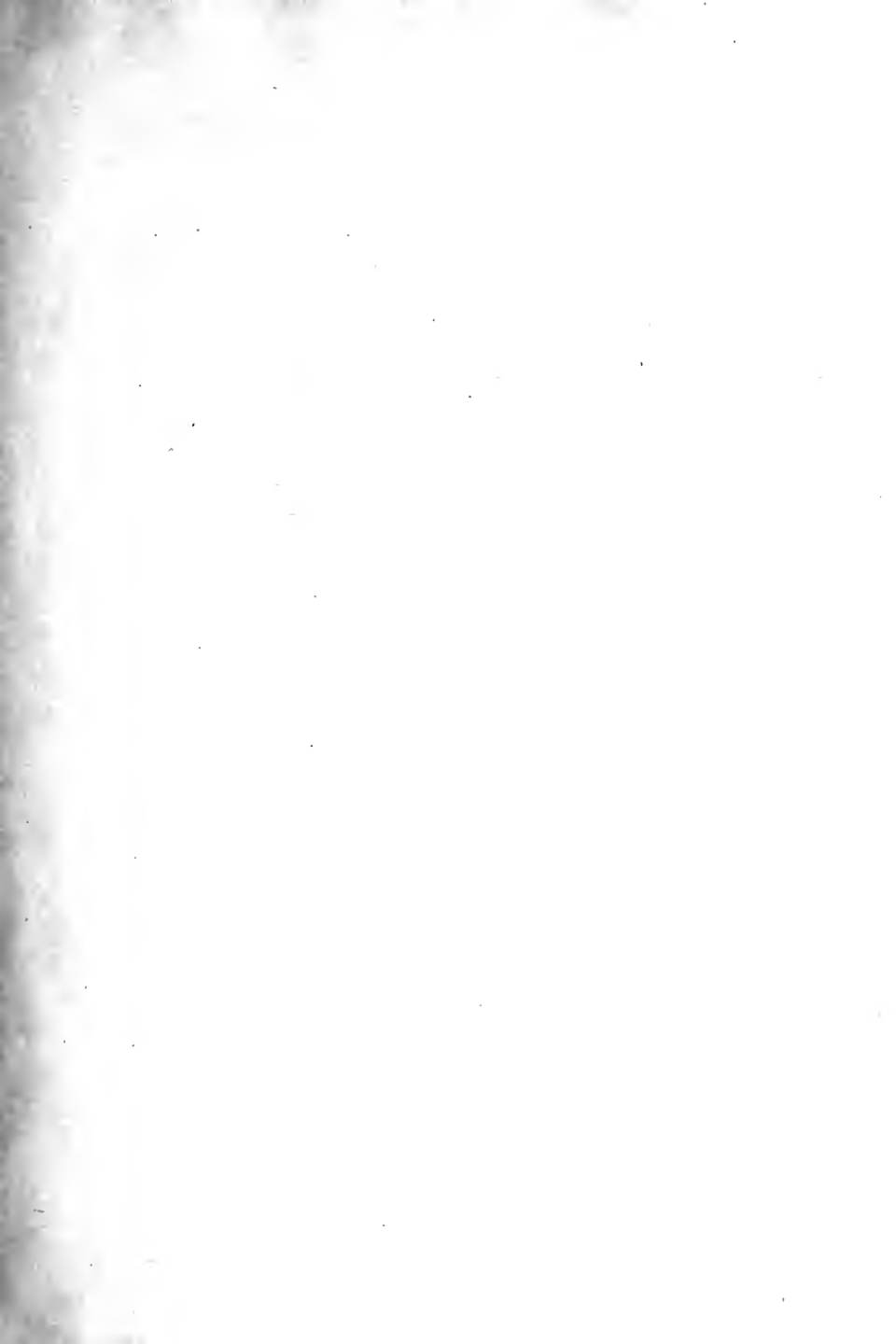
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# SOUTHERN MEDICINE & SURGERY



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JAMES M. NORTHINGTON, M.D., Editor

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No. 1

## Wound Of The Popliteal Artery

KARL MORGAN LIPPERT, M.D., F.A.C.S., Columbia, South Carolina

Veterans Hospital

A WOUND of the popliteal artery with extensive hemorrhage is a surgical emergency that demands attention at once. Every surgeon may at some time be faced with such a case and few will have the Blakemore tubes in assorted sizes at his disposal. In the average instance, the surgeon will be forced to ligate the artery to control hemorrhage.

The appearance of ischemic gangrene of the distal portion of the lower extremity as a sequel to ligation of the popliteal artery, especially when the ligation is incident to wounding of the artery by bullet or similar agent, is so frequent that an exceptional case warrants recitation of its management in detail. It is possible that others confronted by similar cases and employing the same measures may establish the treatment.

### *Case Report*

A United States soldier, aged 23, was accidentally wounded by a 7.2 mm. Beretta bullet in the medial aspect of the upper portion of the middle third of the left thigh in the region of Hunter's canal, the bullet apparently ranging downward. Within one hour the patient arrived at a Station Hospital where he was immediately examined. The left leg was held in semiflexion at the knee and the foot was noted to be pale and cadaveric in appearance. The lower third of the thigh was swollen and tense with an almost board-like resistance to pressure.

There was practically no external bleeding from the wound. No pulse could be felt in either the anterior or posterior tibial arteries and the veins at the ankle were not perceptible. Palpation of the leg caused extreme pain to the patient, especially when the calf muscles were touched. While the operating room was prepared, x-ray pictures of the leg and thigh were made, using pieces of wire as markers to plot the approximate course of the bullet. It was found to have lodged between the tibia and fibula in the upper third of the leg.

Under spinal novocain anesthesia, with a tourniquet in place, the medial aspect of the thigh was opened over Hunter's canal and the incision extended to the posterior aspect of the knee to expose the popliteal space. A huge hematoma was evacuated from the popliteal space and the torn popliteal artery visualized. The artery was found to have been lacerated longitudinally but still held in continuity by a thin band of contused anterior portion of the vessel wall. An attempt was made to close the wound in the vessel by multiple sutures, while flexing the knee; however, the artery was so badly contused that the effort was fruitless. The artery was then exposed proximally to the first large branch of the popliteal artery, and a ligature of No. 1 catgut was applied just distal to this point. Again, going below the point of injury, the popliteal artery was traced to a large branch and

another ligature of No. 1 chromic catgut was placed just proximal to this vessel. The tourniquet was released and the wound irrigated with saline to remove clots of blood, while bleeding points were located and ligated.

After fifteen minutes no pulsations could be detected in the distal ligated portion of the popliteal artery. The popliteal vein which had not been injured was observed to be collapsed. This vein was then doubly ligated with No. 1 chromic catgut and divided. The cut edges of the skin and muscle at the site of the wound were noted to bleed freely by this time. Sulfanilamide, Grams 5, was dusted into the wound and closure performed by the insertion of interrupted "0" chromic catgut sutures in the fascia. The skin closure was with interrupted fine silk sutures. A light supporting splint with a loose dressing was applied and the patient put to bed, maintaining the leg and foot on a plane horizontal with his body. A cradle was placed over the leg to support the bed covers.

The patient suffered some pain during the first three days but the foot was observed to be warm and pink within the first six hours following operation. Passive motion of the foot was insisted upon, beginning the third postoperative day. The incision in the thigh healed without infection. Trendelenburg exercises were begun at the end of a week, at which time the patient was allowed up for short intervals on crutches. After sixty days the bullet was removed from between the tibia and fibula because of a mild persistent swelling in the calf muscles and pain experienced at that site on weight-bearing. Healing was uneventful.

Physiotherapy, leg and ankle exercises of increasing force, were given at this time, followed by rapid return of strength in the leg. Seventy-two days after injury the patient returned to duty. At that time no abnormality of the leg and foot could be detected except the absence of both the anterior and posterior tibial pulsations at the ankle; however, no pain was experienced by the patient even after vigorous walking or climbing stairs.

Following the return to duty, periodic observations of this case were made. Four months after the date of injury, the pulse was found to be easily palpable in both the anterior and posterior tibial arteries of the wounded leg. Comparative measurement of the patient's legs at that time showed the injured leg to be one inch less in circumference about the thigh at the site of the injury and a half-inch less in circumference at the largest portion of the calf. Subjectively, the patient complained only of slight heaviness of the left leg and some swelling of the left ankle after long walking or standing.

## COMMENT

It is obvious that early operation is indicated in the instance of extensive laceration of the popliteal artery to stop blood loss and to prevent pressure stoppage of collateral circulation. In this case the tissues of the popliteal region were under extreme tension. Sehart and Heidreich, corroborated by Brooks, cited by Holman in Christopher's *Textbook of Surgery*, have statistically and experimentally established that there is a lessened incidence of gangrene following ligation of a large artery and its accompanying vein, as compared to ligation of the artery alone.

Simultaneous ligation of the artery and vein aids in maintaining a proper balance between the arterial and venous systems of the extremity distal to the point of ligation. Pemberton, also cited by Holman, observed the absence of pulsation in the distal segment of a ligated artery as an evidence of inadequate collateral circulation, and employed it as indication for ligation of the accompanying vein to increase resistance to the return flow of blood to the heart, as an aid in establishing a more efficient collateral circulation.

It was not necessary to block the lumbar sympathetics in the case presented because of early appearance of warmth and normal color following operation. Had there been later evidence of vasospasm, lumbar sympathetic block would have been employed during convalescence.

One detail, which we believe to be of important significance in the successful establishment of collateral circulation in this case, was the selection of the site for ligation of the popliteal artery immediately distal to a large branch above and immediately proximal to a similar branch below the level of injury. Although thrombosis of a ligated artery progresses backward from the point of ligation to a collateral branch in most instances, a strong pulse may be observed in the proximal stump of a ligated artery for days following ligation. It appears that by ligating an artery immediately adjacent to a collateral branch, the full force of blood pressure will be translated to the collateral vessels rather than be dissipated in the blind pocket distal to the collateral branches.

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CHILD-BEARING apparently decreases the likelihood of death from breast cancer.—E. T. Bell *et al.*

# Aging of Tissues: the Necessity for Research

WM. DEB. MACNIDER, M.D., Chapel Hill

Kenan Research Professor of Pharmacology, The University of North Carolina

**T**HE DESIGNATION OF A BIOLOGICAL and certainly of a sociological process as aging is perhaps unfortunate. In many minds it at once indicates a concern not in the change and readjustments in tissues and in human relationships chronologically regulated by time but in an irreversible state, senility, that finds its end reaction in the naturalness of death. Such a finality of biological and social adventures, while deserving both interest and care, of their nature fail to lend themselves to investigation with the hope of acquiring information that may be applied in a usable and constructive fashion. To prolong senility and the unhappiness usually associated with it would, in truth, be a vivisection. The statement which is to follow is therefore not concerned with senility as an age entity but with acquiring information about those processes which develop in all animal and plant tissue as a result of such tissue as organism being subjected to a life through time which may ultimately lead to senility and, if such be possible, to a termination in senile, physiological death.

The influence of the age of tissues in modifying, if not in determining, types of disease processes in the animal organism has been recognized for centuries, and yet these observations in general have certainly been treated in a superficial, if not an incidental, fashion. The phenomena of tissue resistance as well as susceptibility, in which the factor of age either influences or in a large measure determines these states as the individual as organism advances through different segments of the life span, have not been assigned the importance which they would appear to deserve. This does not imply that the advent of certain specific diseases and tissue modifications of a degenerative order has not been associated in the minds of investigators with such age segments. It does mean that observations of such an order have usually been made in a casual fashion without attempting to disclose the basic nature of chemical cell modifications, the products of aging which may be the factors determining the advent of degenerative alterations in tissues and which regulate, in a measure, their susceptibility or resistance to certain outside agencies, or the cause for specific disease states.

The influence of the age of tissues in terms of their susceptibility is shown very early in the life span by our recognition of a group of disease

processes as specific pathological entities designated as the diseases of infancy and childhood. Such states may develop in adulthood or at even more advanced age periods, but they are predominately more frequent in younger tissues and in such tissues of specific cell types. Certain of these diseases have been shown to be due to viruses which prefer an intracellular order of existence. At such an age period intracellular material would appear to afford a properly chemically constituted culture medium for these living agencies of disease, and as the aging process develops it may well be that this living medium so changes in its composition that it becomes less appropriate for the life and multiplication of these bodies. Age as a modification in intracellular chemistry with or without a change in morphology<sup>3</sup> may have imparted to such cells and the tissues which they constitute an element of resistance to invasions by disease-producing entities. Why do we speak of anterior poliomyelitis as infantile paralysis unless it is due to the likelihood that in the infant and young child motor anterior horn cells of the spinal cord are more susceptible to the invasion and proliferation of the virus of this disease than is the case for these cells at more advanced years or in senility? It is possible that as these cells live into more advanced age segments they may become protected against the virus by the individual forming specific antibodies. These bodies, however, cannot be demonstrated in such advanced age segments of maturity or in senility in a sufficient percentage of incidence as to explain the decrease in the likelihood of infantile paralysis appearing in such periods of the life span. In reasoning of a reverse order, in the influenza epidemic of 1917 infants and young children were relatively notably spared the development of this virus disease, while adults who chronologically had been afforded the time factor in which to acquire, by mild infections, an immunity of an extracellular chemical order were especially susceptible to it; and in this age segment of adulthood the mortality percentage rose to its height, again declining in the senescent and senile age groups.

The same order of inquiry applies to malignant disease.<sup>4</sup> If such tissue developments have as their exciting cause the action of specific viruses, why is it that such bodies find in the cells, especially of certain organs as they pass their peak of maturity and into senescence, a favorable environment for their existence and express such an adap-

\*Reprinted from *Science*, November 1st, 1946, Vol. 104, No. 2705, pages 405-466.

tation in a wildness of cell growth and an associated intoxication of the organism as a whole, designated as malignant disease? The occurrence of such states in infancy and early childhood and in senility is less frequent than in the mature and senescent individual. If such tissue growths come about from a lack of chemical tissue restraint or the advent of a tissue stimulus other than a living invading organism, it would appear equally important that knowledge of a highly complex, difficult-to-obtain, and exact order should be searched for in tissues at various age segments in order to explain modifications in tissue susceptibility or resistance to the development of such states of malignancy. Such states favorable to virus growth, to a lack of tissue restraint, or to tissue stimulation cannot be ascertained until we possess biochemical and biophysical information of cell life at various periods in the life of the organism as a whole, in order to contrast chemically through these data periods in the life span of tissues characterized by relative resistance as susceptibility to changes of a malignant order.

At the present time diseases of the heart and blood vessels, especially the latter, take the highest toll of life. Such terminal events, in all likelihood commencing years before the finality of the blood vessel accident or episode, certainly show themselves in a much higher percentage in adult and late adult life. The occurrence of coronary artery disease with occlusion in youth has recently been emphasized.<sup>1,2</sup> These heart and blood vessels changes are usually seen as tissue changes in the process of repair, as indicated by the laying down of fibrous tissue in the place of a protective endothelium and functional muscle tissue. The familial incidence and, of more significance, the age incidence in the development of such disease cannot be questioned. Basic research of a chemical order in an attempt to learn the nature of those chemical changes, the modifications in blood vessel tissue metabolism, and tissue metabolism in general, in which such vessels that are associated with aging share, has certainly lagged in its applied interest. The older microscopic type of investigation, perhaps for want of an adequate chemical technique, continues to dominate investigations concerning the causes of heart and blood vessel disease. This most important problem will be solved only with the discovery of the biochemical constitution of tissues as they advance from an age period of relative nonsusceptibility to vascular disease into that middle-age segment in which their susceptibility is marked and at which time such changes often terminate life. As a result of the rapidly increasing life span of the individual there will be a mounting number of human beings falling in that age segment in which vascular disease reaches such a state

of development as to express itself either as incapacity or death.

Through certain illustrations used above, an attempt has been made to divest the minds of many individuals of an interpretation of the study of aging processes as a dominant interest in senility. Senility and the care of the senile deserve consideration both as biological end reactions and as an expression of the fineness of human feeling. The significance of an understanding of aging resides in the assumption that through such information the shifting, adapting, and nonadapting changes of a chemical order of life are to express themselves in determining those age areas in which tissue degenerations make their appearance, in which tissues exert their influence in the formation of new and abnormal tissue growths, or the advent of certain specific states of disease falling in the group of viruses which require an intracellular environment highly specific in its chemical constitution for their propagation.

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#### VALUE OF ELECTROCARDIOGRAPHY

(L. N. Katz & L. G. Kaplan, in *Clinics*, 5:235-247, 1946)

Heart failure and degree of cardiac reserve or cardiac tonus are not indicated by electrographic changes. Though a valuable aid in diagnosis, the ecg. in no way replaces physical examination or observation of a patient. The most important use is for diagnosis.

Low voltage in the QRS complex does not represent the force of ventricular contraction but may result from insulators near the heart or a more horizontal cardiac position. Small deviations of the S-T interval are normal; large deviations show ventricular injury or unilateral heart strain or block.

The ecg. shows the age and location of acute myocardial infarction in anteropapal and posterobasal areas and in the left lateral wall.

During digitalis medication, S-T—T deformities may indicate overdosage. Ventricular premature systoles warn of impending ventricular fibrillation.

In differentiating arrhythmias: Irregular pulse may be due to auricular fibrillation, multiple ventricular premature systoles, multiple auricular premature systoles, sinus arrhythmia or A-V block. A slow heart rate may be caused by sinus bradycardia, a nodal rhythm, or partial or complete heart block. At times paroxysmal tachycardia occurs when precise therapy is important—during infarction or failure; the ecg. shows the type of acceleration, and appropriate medication may be chosen.

Alcoholic excess, narcotics, cerebral hemorrhage, uremia, shock, and diabetic coma may produce curves suggesting coronary insufficiency, acute or chronic. Thyroid dysfunction and avitaminosis cause irregular changes which disappear as the patient recovers, unless organic heart disease is present.



# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., Editor, Richmond, Va.

### . YE . . THE TRUTH

"CRIMINAL INSANE"

We do not believe in the verdict 'innocent because of insanity'. There have been, in the recent past, a large number of horrible murders and many of them combined with mutilation and ravishes in which the perpetrators of the crimes were declared insane. It has come to pass that when one has an urge to kill if he will only make his murder horrible enough, he stands a good chance of being freed because of insanity. We do not take any stock in that phase of the law at all. We are not certain about our position on capital punishment. If, however, the death penalty is to be exacted from anyone, we think it should be from those who qualify as criminally insane. If their insanity is a subterfuge, it is a license to go further and commit other crimes. If it is true that the person is criminally insane, he will be a menace as long as he lives. Very few, if any, have to remain for any considerable length of time in the insane asylum. They are soon declared sane and yet they are absolutely beyond the law because they have once been declared insane. Maybe our position is a cruel one and certainly it is not in line with the present law concerning capital crimes. But that is our idea and has been for years. If capital punishment is to apply to anyone, it should be applied to the one who hides behind the plea of being criminally insane."

The quotation is lifted bodily and verbatim from *Charity & Children* of December 26th, 1946. The weekly is the official publication of the Baptist Orphanage of North Carolina at Thomasville. The Editor of the weekly is John Arch McMillan. I doubt not that the little newspaper goes into more homes in North Carolina than any other weekly.

Although I am not affiliated either with the Baptist Church or with the Orphanage I have been reading *Charity & Children* as a subscriber each week for many years. The Editor has something to say each week and he says it in his way. I admire his independent spirit and his courage, but sometimes, not often, I doubt the validity of his judgment.

The quotation above, by reading which I hope you will experience as much pain as I felt when I read it two days after Christmas Day, is the first of three of the Editor's "Editorial Topics" on the first page of the weekly, published on the day after

Christmas Day. The spirit of charity did not seem to be guiding the pen of the Editor during the formulation of that Christmas topic.

The Editor advocates the electrocution of those individuals who have been adjudged by the State's courts to be criminal insane persons. I interpret the Editor's statement to mean that there are two groups of so-called criminal insane persons—in the one group are those criminals who succeed in feigning insanity; in the other group are those criminals who are actually insane. The Editor would remove by execution those who feign insanity, probably both because they feign and because they are responsible for their misdeeds. The members of the second group, who are really insane, he would submit to execution because they constitute a menace to society as long as they may live.

There are those who look upon the so-called insane as sick folks. The feature of the insane person's condition that causes most concern is the mental state. Not infrequently, because of an irrational idea or because of lessened self-restraint, an insane person is dangerous—sometimes to self, sometimes to others. Those who work with the mentally sick and who live with them are constantly unconsciously conscious of the situation. The understanding nurse and the experienced doctor look upon a violent outburst of behaviour in a mentally sick person as a symptom of disease. The untrained or the unwise person may look upon such abnormal behaviour as meanness, and may deal with it by punishing the patient.

The press has announced that the Governor of Mississippi has declined to interfere with the sentence of the court that two Negro boys of fifteen years each be electrocuted for the commission of a capital crime.

One is obliged to wonder if the understanding of abnormal human behaviour can be deepened by the execution either of the insane or of children.

The longer I live the more poorly I value condemnation as a diagnostic aid or as a therapeutic procedure. It may be well enough for the Editor to do psychiatric diagnostic work in absentia, but the wise psychiatrist, if any such there be, would insist upon at least seeing the patient before expressing a diagnostic judgment.

Probably not much is known about those disciplines spoken of as criminology and psychiatry. The pronouncing Editor lives scarcely a hundred miles from Raleigh. Were he to spend the current year as a daily worker amongst the patients in the State Hospital at Raleigh—in the Hospital and in the building for the Criminal Insane—one wonders if on next December 26th he would write in some modification of his editorial of last December 26th.

## PROCTOLOGY

RUSSELL BUNTON, M.D., *Editor*, Newport News, Va.

### STRICTURE OF THE RECTUM

**BENIGN STRICTURE OF THE RECTUM** most often results from previous infection with lymphopathia venereum. It is the end result or third stage of the disease, the first two stages ordinarily being undiagnosed. It afflicts women mostly. The patient usually presents herself stating that she is constipated and that the stool is quite small. If the condition has persisted over a period of time, the patient is emaciated and suffering from partial low intestinal obstruction. At this stage, the usual complaint is diarrhea which is caused by impaction above the stricture resulting in irritation of the walls of the colon causing a watery discharge. Examination reveals a constriction usually within two inches of the anus. In advanced cases, the opening may be exceedingly small and it is rarely possible to insert a finger past the stricture. Visual examination through a proctoscope reveals very little change in the mucosa of the bowel. There are ordinarily no ulcerations visible.

In advanced cases, the best treatment is permanent colostomy and this may be necessary as a life-saving measure. The use of heat as applied using the small applicator of the Elliott machine has been of value. With the use of this machine it has been possible to open a few of these strictures so that the patient no longer suffers discomfort and has nearly normal stools. The treatment is more or less temporary and mild finger dilatation may be used to supplement the heat treatment. It would be repeated every two to three years in order to keep the stricture from reforming.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### HEART DISEASE AN INDICATOR OF CHANGING FEATURES OF MEDICAL PRACTICE

IT IS STARTLING to consider the shifts in rank of different diseases as killers in the present century. Lueth calls attention to this subject and makes appropriate elaboration.<sup>1</sup> The nearly three-times increase in mortality from heart disease, and its advance from fourth to first place in the list causes this essayist to give heart disease special consideration.

In 1900 there were 1,755 deaths from all causes per 100,000 population. The 12 principal causes of death in order of frequency were: pneumonia, 180.5; tuberculosis, 180.4; diarrhea and enteritis,

133.2; heart disease, 111.2; nephritis and Bright's disease, 89.0; apoplexy, 67.5; cancer, 63.1; old age, 50.4; bronchitis, 45.4; diphtheria and croup, 43.3; meningitis, 40.9; typhoid fever, 35.9.

The ten leading causes of death in the United States, 1944: diseases of the heart, 315.4; cancer and other malignant tumors, 129.1; intracranial lesions of vascular origin, 93.7; nephritis, 69.2; pneumonia (all forms) and influenza, 61.7; accidents (excluding motor-vehicle), 53.5; tuberculosis (all forms), 41.3; diabetes mellitus, 26.4; premature birth, 25.0; motor-vehicle accidents, 18.3.

A sharp decline of deaths from infectious diseases occurred from 1900 to 1935, while there was a steady rise of deaths from degenerative diseases over the same period.

Youthful hypertension must be considered as an important feature of current medical practice. Careful laboratory tests such as the 15-minute psp. test, a satisfactory 12- or 20-hour concentration test of the urine, a study of the urinary sediment, blood chemistry studies and, if available, urea-clearance tests are clearly indicated so that the extent of the damage can be appraised. An examination of the retinal vessels often yields valuable information.

Important causes of hypertension in young individuals are hyperthyroidism, obstruction to the urinary tract, primary renal disease, coarctation of the aorta, tumors of the adrenal and pituitary gland, arteriosclerosis and periarteritis nodosa. *Elevation of blood pressure from unknown cause* will constitute four-fifths of all cases.

In the treatment of essential hypertension the author prefers nitroglycerine even though its effects are transitory.

Potassium thiocyanate (gr. ii to iv) given either as capsules, tablets, or preferably combined with elixir three bromides, have exerted a very steady influence on blood pressure. A sample test kit is available on the market so that some physicians determine thiocyanate levels in their offices. Best results are obtained when levels of 6-12 mg. per 100 c.c. of blood are maintained. Thiocyanates are valuable drugs in the treatment of hypertension, but their use must be carefully supervised and the patient frequently reexamined.

All are familiar with the quiet and calm that sedatives frequently give to the high-strung hypertensive patient.

All mild and severe sore throats, sinusitis, upper respiratory infections and otitis media should be considered as potential forerunners of rheumatic fever. Any patient with a sore throat who is slow to recover, has a low-grade fever and an elevated sedimentation rate must be viewed with suspicion. Monocyclic and polycyclic joint disease are often the first indications of the disease to the

1. H. C. Lueth, Omaha, in *Ill. Med. J.*, Nov.

patient and his family and are the conditions generally found by the physician at his first visit.

Complete bed rest is imperative until all signs of activity have subsided. Sedimentation rates and pulse rates have been valuable guides to the cessation of activity. A highly nutritious diet and good nursing care are important. Large doses of sodium salicylate (gr. xx-gr. xxx) are most effective. It appears inadvisable to use sodium bicarbonate with the salicylate. Usually a blood level of 30-50 mg. per 100 c.c. of blood can be obtained within 24-48 hours by the oral administration of sodium or acetyl salicylate in 20- to 30-gr. doses q. 4 h. Intravenous administration of salicylates is rarely needed. Sulfonamides results are not impressive. In the prophylaxis of the disease the sulfonamides have exerted demonstrable effect in reducing the incidence of septic sore throat, acute otitis media, sinusitis and tonsillitis.

After the inactive stage has been reached physical activity should be carefully regulated by the physician. Nurses with special aptitude or training in physiotherapy can do much to help the physician.

Treatment of arteriosclerotic heart disease consists in the use of vasodilator drugs, sedatives for rest and adjustment of the patient's life well within his physical and mental capacities. Amino-phylline (gr. i ss-gr. iii) phenobarbital bromides; a diet low in cholesterol is probably as beneficial as any single item. The low-sodium diet in cases of arteriosclerosis and hypertension.

The physician should strive to find some outlet for the physical and mental energy of the retired.

## RADIOLOGY

DRS. LAFFERTY AND BAXTER, *Editors*  
Charlotte, N. C.

### THE PATTERN OF INJURIES PRODUCED BY THE ATOMIC BOMBS AT HIROSHIMA AND NAGASAKI

ALL OF US are eager to know all we can about the ways in which the use of the atomic bomb kills and maims. Warren and Draeger<sup>1</sup> tell us much for our enlightenment.

The kinds of injuries which occurred as a result of the atomic-bomb explosions at Hiroshima and Nagasaki ranged from instant death by crushing or fire to delayed radiation sickness evidenced by weakness and lassitude appearing weeks after the explosion. Often several types of injury were inflicted on a single person.

The explosion of an atomic bomb releases energy which is dissipated in several ways, some of which are similar to those of a high-explosive bomb, some entirely new in the use of destructive imple-

1. Shields Warren & R. H. Draeger, in *U. S. Naval Bul.*, Vol. 46, No. 9.

ments.

Of types of blast injury, those due to air blast, water blast, and solid blast have been presented. To this classification we add the term, radiation-blast injury, to include the additional types of injury, previously unknown as the result of an explosion, but characteristic of the explosion of the atomic bomb.

A greater number of injuries was probably caused by ionizing radiation-blast effects, gamma rays and neutrons, than by any other type of injury resulting from the explosion of the bombs. However, since the effects of this ionizing radiation takes hours, days, or even weeks to appear, their importance was largely masked by the great numbers killed by flash burn, fire, or wreckage of buildings.

At Hiroshima and Nagasaki evidences of injury due to water blast or solid blast were not found.

Air blast: There was an outrush of superheated air and gases capable of producing injuries of the flash-burn type, or of setting secondary fires which can cause flame-burn injury. The third phase of air blast, the air-pressure wave which travels outward from the focus of detonation, accounts for the majority of injuries in explosions of large charges. The advancing compression wave in air will rarely produce injury in those subjected to its impact (first thrust, then compression as envelopment by the wave occurs), by tissue disruption at tissue-gas interfaces, such as the lung, air- or gas-filled portions of the intestine or stomach, or the ear drum.

Far the greatest source of air-blast injury is displacement as the pressure wave moves outward, either of the victim himself (flung against the ground or a building or the wreckage hurled against him) or displacement of debris due to structural collapse. The wreckage of structures by the pressure wave may produce secondary fires through the ignition of debris by household fires or electric short-circuits. Both at Hiroshima and Nagasaki the area of pressure-wave destruction exceeded that of destruction by fire.

The unique feature of an atomic-bomb explosion is the liberation as electromagnetic radiation and neutrons of a great portion of the energy produced by fission. This radiation is thermal in part, and in part ionizing. The infra-red rays caused flash burns, sharply demarcated from erythema and slight blistering to extensive third-degree burns.

The visible components of the thermal radiation apparently did little or no harm even to the eyes, probably due to the very short period of their emission. Whatever effect the ultraviolet rays might have had was masked by the damage done by the more deeply penetrating infra-red rays.

Peculiar to the atomic-bomb blast is its ionizing

component, delivered in terrific intensity. Those affected by it showed the same general sequence of pathological changes that follow exposure to a heavy dose of roentgen rays.

At first no change was noted objectively. Nausea or malaise appeared early. Within a few hours lymphocytopenia appeared in those more heavily exposed. The most heavily radiated died in a few days, probably as a result of toxic autolysis of tissue. Those who lived longer showed selective injury, usually to bone marrow or gonads. The clinical course of those showing selective bone-marrow injury could be divided into several groups according to the predominant feature—leukopenic, hemorrhagic, anemic.

After several days, or even up to three or four weeks, leukopenia was so severe in some as to permit the development of Ludwig's angina, ulcerative enterocolitis, furunculosis, or other infectious lesions. If recovery occurred, hyperplasia or hematopoietic tissue developed, not always signalled by leukocytosis. More or less paralleling the leukopenia, but lasting longer, hemorrhagic manifestations became obvious, and were accompanied by thrombocytopenia. The peak of hemorrhagic deaths was three to six weeks after the exposure. Most of the optic injuries encountered resulted from retinal hemorrhages. The slowest hematologic change to develop was anemia, at first mild, then more severe. Recovery to a greater or lesser degree occurred in some. Others died with r.b.c. count of 1,000,000 or below. Along with the hematologic changes atrophy of lymphoid tissue occurred, followed by slow regeneration.

Epilation was frequent, and histologic examination showed damage to follicles, sebaceous and sweat glands.

Since gonadal tissue is highly radiosensitive, it was not surprising to find cessation or impairment of spermatogenesis. Injury to the ovaries was less frequent, as the body usually protected these organs partially from the radiant energy.

Residual radioactivity due to contamination of the area by fission products of the bomb is conceivable, but of the few persons who had come into the area shortly after the explosion at Nagasaki and had remained there for some weeks, none showed evidence of injury.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### THE TREATMENT OF THE CORONARY EMERGENCY

CORONARY ARTERY DISEASE is here divided into angina pectoris or angina of effort, acute coronary insufficiency and coronary occlusion. Coronary oc-

clusion may occur from thrombosis of a narrowed arteriosclerotic coronary vessel, intramural hemorrhage in a coronary vessel producing closure, or rupture of a subintimal lipid abscess with plugging of the lumen. Acute coronary insufficiency indicates necrosis or infarction of the myocardium without complete closure of a coronary artery. Pain and necrosis of the myocardium occurring as a result of severe or prolonged diminution in coronary flow without actual closure is now an accepted fact.

Angina of effort (angina pectoris) represents a temporary insufficiency of the coronary flow, and differs from the more severe forms of coronary insufficiency and occlusion in that anatomic alterations do not occur in the cardiac muscle.

So Sherman<sup>1</sup> introduces his discussion of this always absorbing subject. And he goes on:

Precordial pain places a responsibility on the physician to utilize every means at his disposal to determine the cause of the pain and the extent of cardiac damage. The diagnosis can be made with a high degree of accuracy.

Angina of Effort: The classical picture includes substernal pain with its radiation, and its relation to effort, excitement, cold and eating; is relieved by the short-acting nitrites and rest. Nitroglycerine is in order for the acute episodes, aminophylline, theobromine, whiskey and other vasodilators can be given to prevent more prolonged and continuous vasoconstriction. Later care must be taken about undue exertion, particularly in cold weather and after meals; barbiturates or bromides for the slowing down of effort.

Myocardial infarction produces prolonged pain, shock, gallop rhythm, impairment of the first heart sound, occasionally a precordial rub, a fall in blood pressure, fever, leukocytosis, and a rapid sedimentation rate. Absolute rest is demanded, with sufficient morphine to assure relief of pain. In pulmonary congestion and cyanosis continuous oxygen therapy frequently relieves both the cyanosis and intractable pain.

Shock calls for small doses of epinephrin and caffeine. In severe collapse and dehydration the slow administration of 200 to 300 c.c. of hypertonic glucose to which 334 grains of aminophylline have been added is effective in alleviating shock and combating dyspnea.

To limit regional vasoconstriction and prevent ventricular fibrillation the use of papaverine hydrochloride, a powerful coronary dilator, is suggested. In a large group of animals the mortality after coronary ligation was 75%, but when atropine was given intravenously the mortality after ligation was reduced to 35%; when atropine sulfate and aminophylline were given together the mortality was only

1. R. V. Sherman, Red Wing, Minn., in *Minn. Med.*, Sept.

33%, and when aminophylline was given alone, the mortality was 56%.

Quinidine sulfate used in patients with degenerative heart disease greatly reduced the incidence of sudden death. Quinidine sulfate in many cases of myocardial infarction prevents ventricular fibrillation. It is contraindicated in the presence of conduction defects.

Pulmonary embolism is not an infrequent cause of death in those dying after coronary infarction. After coronary infarction iliac thrombosis is apt to occur, due to the lowered blood pressure and prolonged periods of bed rest. Deep breathing and passive movements of the legs are to be ordered as early as reasonable.

Although it has been shown that the anticoagulants, heparin and dicoumarol, can prevent intravascular thrombosis, the infrequency of premonitory signs precludes any important use of these drugs in the prophylaxis of thrombosis of the coronary arteries.

Another cause of death is myocardial failure, which is often accompanied by pulmonary edema.

Digitalis should never be used early in coronary occlusion, as it is thought to increase the danger of cardiac rupture during the period that the infarct remains soft. Mercurial diuretics should be used only after evaluation of the risk attendant on rapid mobilization of fluids, which increases the load placed upon the heart.

The often conflicting statements from doctors in high position give little help to the bedside doctor. Some say little or nothing can be done in the way of real help.

Sherman thinks otherwise, and he writes down definite ways of differentiating the several emergencies of coronary origin, and definite means of meeting these emergencies.

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## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

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### GOOD HEALTH PROGRAM AND MEDICAL CENTERS

PUBLICITY has been recently given to the establishment of a Good Health Program for North Carolina. This is a noble undertaking and those who are responsible for its beginning deserve great credit. However, as is to be expected, opposition has been encountered. The leaders should not be discouraged, but more determined than ever to give the people of this great state what they need and what they deserve for their tax money.

The oppositional group are not so much opposed to the program itself as they are to some parts of it. No program was ever started that satisfied everybody in its entirety; and the writer ventures

to say that even the leaders, themselves, are not entirely satisfied with every phase of the movement. However, it must be started before it can be finished.

The question that concerns the thoughtful non-professional taxpayer and leader is: First, appropriations. Second, personnel. The appropriations will have to be made by the general assembly. The personnel will have to come from the medical and nursing institutions in this and other states. We are concerned in this article more with the personnel than with the appropriations.

It would seem ever so practical that the establishment of a health center would require some doctors and some nurses over and above our present supply in that particular community. It would seem wise to predetermine the number of doctors and nurses for a given Health Center before that center is built. An economist would then want to know where the personnel could be found, to utilize to best possible advantage the money spent in building and equipping the Health Center. For in reality, a health center is nothing more nor less than a community hospital. It is to be hoped and expected that the personnel of these community hospitals will be sufficient to adequately care for the medical program current in that community.

For this to be so, we must have trained superintendents, trained operating room superintendents, and trained specialists in medicine, surgery, pediatrics, obstetrics, roentgenology, bacteriology, and pathology. These eight people must have special training somewhere. But long before they have the special training, they must have the M.D. and R.N. degrees. Therefore, preparation must be made for their graduation from training schools and medical schools. It would seem reasonable that at least six to ten health centers would be established during the first few years of the Good Health program.

The other personnel—dietitians, technicians, etc.—could be trained, perhaps, with such facilities as we now have in the state. But these are also very much in demand and the supply for our present hospitals is far too few. If six of these centers are established, we shall need not less than twelve graduate nurses for each institution, and this would mean seventy-two nurses that we do not now have to spare. To those of us who are interested in operating hospitals this apparently small program is quite a headache. Obviously, therefore, we would have to train nurses for regular floor duty to do the routine nursing. This cannot be done with the number of training schools in the state. Therefore, this group of the nursing personnel would have to be educated and prepared to take care of these community hospitals.

It would be exceedingly shortsighted on the part

of any legislative body to appropriate money to erect buildings, and purchase hospital beds, x-ray and operating-room equipment, until they could be reasonably assured that sufficient personnel could be obtained to use these expensive facilities. One cannot see how they can have that assurance with the present set-up in North Carolina; or, indeed, anywhere else in the whole United States. One only has to listen to the radio and read the daily papers to become familiar with the fact that there is an alarming scarcity of nurses and doctors, and an acute need for their number to be increased tremendously in order to meet the multitude of post-war programs in the health field. The rate of increase in the population of the United States immediately after the war is going to be tremendous. The birth rate during the war was considerably greater than for the years leading up to the war.

The answers to these problems can and will come only as a result of sound thinking by an unprejudiced mind. In the judgment of the author of this article, those who are taking the lead in the Good Health Program have been doing sound thinking and have had an open mind. It is only hoped that they will not be too much affected by the criticism of the minority citizenship organized to oppose part of the program, mainly because they refuse to see clearly the complete picture and not because they do not want better health for the people of North Carolina.

## OBSTETRICS

HENRY J. LANGSTON, M.D., *Editor*, Danville, Va.

### USE OF THE VOORHEES BAG TO INDUCE LABOR AND TO FACILITATE DELIVERY IN PROLONGED LABOR

A FEW OBSTETRICIANS, says Howe,<sup>1</sup> are of the opinion that bags may sometimes be used to advantage.

The three main indications he gives as control of hemorrhage from low-lying placenta, operative induction of labor, and as a means of expediting delivery in cases of prolonged first stage.

Apparently few obstetricians now use this formerly popular implement. It is gratifying to learn that it is still found useful.

In 100 consecutive cases of bagging during the past 6½ years, Howe has used a Voorhees bag for induction in 38 cases, many of them preëclampsics. Cases approaching the eclamptic status he terminates just as soon as the cervix is soft enough for a safe induction. He goes on to discuss the subject in detail. If indications for termination are definite and the cervix is unsuited for induction, abdominal delivery is justified. No real eclamptic

should leave the hospital undelivered. With presenting part fairly well engaged and/or if the cervix is less than two fingers dilated, simple rupture of membranes will suffice. If the cervix is nearly two fingers dilated and the presenting part floating the bag is safer and more rapid in its action.

Labor of 14 hours with no evident cervical progress for three hours is an indication for a rest period and intravenous fluids. Following such a rest period, if resumption of pains for several hours results in no cervical change, operative interference is indicated.

Presence of the bag stimulates uterine contractions by acting as a foreign body, favors cervical retraction, and acts as a mechanical dilator under the effects of uterine contractions. Braxton Hicks version will also usually suffice but carries a considerably higher fetal mortality. Bags and prophylactic version will both secure cervical dilation if delay is due to a malposition. Neither should be used if delay results from fibrous or cicatricial tissue in the cervix.

Simple cord prolapse with the baby still in good condition may *sometimes* be corrected by manual or instrumental replacement of the cord with bagging to keep the cord in position.

Instances of primary uterine inertia are rare. Sedation, rather than stimulation, will be indicated. Secondary inertia usually means a uterus that has become exhausted trying to overcome some factor of dystocia, such as malpresentation, malposition or cephalopelvic disproportion. Sedation and fluids first, then operative intervention, will sometimes serve here. Cervical dilatation and subsequent delivery may be expedited by bagging, by prophylactic version, by simple rupture of membranes, or by cervical incisions.

Howe does not favor use of bags in placenta previa. Previa centralis is an indication for abdominal section. If previa is marginal, simple rupture of the membranes and perhaps application of Willlett forceps will usually suffice. If the previa is a lateralis, rupture of membranes and/or bagging if cervical effacement and dilatation permit. If the previa patient is bleeding freely through poorly effaced cervix, abdominal section will be done regardless of the type of previa or the status of the baby.

Routine for bagging:

1. Preliminary sedation.
2. Cleansing enema.
3. Patient in delivery room, usual preparations for delivery including catheterization.
4. The selected bag, usually a No. 6 Voorhees, is tightly rolled and grasped so as to allow ½ inch of the rolled bag to project beyond the end of the sponge forceps.
5. Exposure of the cervix with speculum or

1. C. D. Howe, Birmingham, in *Jl. Med. Assn. Ala.*, Dec.



blood vessel in the muscle has been entered. Obviously this determination is of great importance; however, this detail is impossible with the special syringes designed for some of the beeswax-peanut oil preparations. The emulsion may be removed readily from the syringe by first rinsing with acetone and then with 70% alcohol or hot tap water.

It is advisable to use the calcium salt of penicillin as the sodium salt is more apt to be separated from the oil in the tissues.

The daily minimum requirement to maintain an adequate blood level has been recommended as 300,000 units of penicillin; in some of the less extensive skin infections as little as 100,000 units daily has sufficed. Injections of 500,000 units of penicillin in one dose have been administered without any ill effects.

In the present series of 25 cases of skin diseases so treated, impetiginous dermatitis, staphylococcal abscesses, cellulitis, ecthyma contagiosum and human bites showed an immediate response to the penicillin injections.

This appears to be an improvement on familiar man bites showed an immediate response to the penicillin injections.

ways of giving penicillin, one dose daily. It is recommended for trial and critical evaluation.

#### RELATIVE EFFICIENCY OF QUINACRINE (ATABRINE) AND QUININE IN TREATMENT OF ACUTE ATTACKS OF VIVAX MALARIA

IN A STUDY of the comparative efficiency of quinine and atabrine in the treatment of acute attacks of vivax malaria, at Moore General Hospital, Swananoa, N. C.,<sup>1</sup> the results indicated that atabrine controls parasitemia and symptoms more promptly and effectively, and that when relapse occurs the interval is longer following atabrine therapy than after quinine.

Treatment was begun in every case on the morning following the onset of the attack. On the first day the total dosage of atabrine was 1 Gm.—0.4 Gm. after breakfast, 0.3 Gm. after lunch, and 0.3 Gm. after supper. From the second to the seventh day 0.1 Gm. was given t.i.d. p.c. Thus the full course consisted of 2.8 Gm. during seven days.

Clinical attacks of vivax malaria in 100 patients were treated with quinine started on the morning after the onset of the attack. On the first day, quinine sulphate in disintegrating tablets was given in a total dosage of 3 Gm.—individual doses of 1 Gm. q. 8 h. From the second to the 14th day 0.65 Gm. t.i.d., at eight-hour intervals.

The patients treated with atabrine left the ward on the eighth day, while those who received quinine left on the 15th day.

Within 12 hours after the first dose of atabrine, negative smears were obtained from some patients. This did not occur with quinine. After 24 hours,

1. Major Harry Most & Col. Jos. M. Hayman, Jr., M.C., A.U.S., in *Amer. J. Med. Sci.*, Mar.

26% of the patients receiving atabrine were parasite-free; only 7% of those receiving quinine. After 48 hours, the percentages were 77 and 44, respectively. All patients receiving atabrine were clear of parasites after 96 hours. With quinine, on the other hand, almost one-fourth still had parasitemia at this time, and in a few cases this persisted as long as 132 hours.

The percentage of patients with a temperature of 100.2° F. or higher on the second or third day of treatment was seven in the group treated with atabrine and 10 in the group receiving quinine.

Symptoms were more strikingly and more promptly controlled by atabrine.

No major toxic manifestations were encountered during the administration of atabrine. It is not advisable to administer atabrine to patients with eczematoid or exfoliative dermatitis and acute malaria if they have taken the drug previously.

One patient receiving quinine developed acute thrombopenia, purpura and severe angioneurotic edema of the face on the first day of treatment. This patient was subsequently found to be extremely hypersensitive to quinine. With either drug, rare cases of idiosyncrasy or sensitization may be encountered.

Eighty per cent of patients with infections of Pacific origin relapsed within the period of observation of 120 days. In general, the relapse rates in malarial infections of Pacific origin are much higher than those of the southern United States. Relapses following quinine began as early as 12 days after completion of treatment and occurred frequently during the first 30 days; at the end of a month 55% of the entire group had relapsed. On the other hand, following atabrine therapy, only 9% of the patients relapsed during the first 30 days, and none in less than 21 days. At the end of 40 days the relapses were 25% after atabrine and 67% after quinine. The maximum observed relapse rate of 80% was reached at 60 days with the quinine-treated group and at 120 days with the group which received atabrine. The mean interval before relapse following atabrine was 53 days, compared with 38 days following quinine.

Since neither drug materially influences the ultimate relapse rate, it is desirable to select a regimen which produces the longest possible interval before relapse. The superiority of atabrine to quinine in this respect is obvious.

## UROLOGY

RAYMOND THOMPSON, M.D., Editor, Charlotte, N. C.

### TREATMENT OF THE PATIENT WHO HAS URETERAL CALCULI

THE CAUSES of urinary calculi remain almost as obscure as 20 years ago; the diagnosis and treatment have reached a high plane of efficiency.



Their presence can be detected by an ordinary roentgenogram in more than 90% of the cases. Accurate localization is possible usually by excretory urography alone; in certain cases cystoscopy and retrograde pyelography are necessary.

A good many reports have been made which ascribe to certain drugs great value in promoting the passage of these stones. In our hands these drugs have been disappointing. Our experience has been in accord with that of Pool and Ferris, as here given in brief.

Stones above the brim of the bony pelvis and too large to pass spontaneously and large stones in the lower portion of the ureter should be removed by ureterolithotomy. Those below the pelvic brim, if not too large, usually can be removed by trans-urethral manipulation. No urologic procedure can cause more trouble or be more successful than the removal of ureteral calculi.

Many ureteral calculi will pass spontaneously if given the opportunity; the percentage is higher than that usually given. As, if a calculus has completely obstructed the ureter irreparable damage occurs in a few weeks, the patient is best served by early intervention. Calculi in the upper two-thirds of the ureter are much less likely to pass spontaneously than those in the lower third. Injection of oil or anesthetic agents above or below the calculus or administration of drugs by mouth is not to be recommended, except to alleviate pain. These procedures certainly are a waste of time in cases in which the calculi are impacted. If the calculus is small and is causing no symptoms, the patient may be kept under observation in the hope that the stone will pass, provided infection or complete obstruction of the ureter does not intervene.

There are certain patients who should be allowed to pass calculi under the observation and care of their physician. These are persons whose urinary tract does not respond well to manipulation. They react badly even to passage of an instrument through the urethra, and ureteral catheterization is apt to result in a long course of chills and fever. If these patients are known in advance then at least an attempt should be made to allow them to keep out of difficulty and pass their stones.

Medical treatment of ureteral calculi with various relaxing agents has failed in our hands. Many observers regard these agents of definite benefit. They apparently do no harm except in certain cases in which more prompt intervention might have been better for the patient. Relief from pain by the use of opiates should be continued.

Ureteral manipulation can be very simple, or it can be one of the most difficult of procedures.

I. T. L. Pool & D. O. Ferris in *Surg. Clinics North America*, Aug., '45.

The passage of a ureteral catheter may dislodge a calculus or change its axis so that the calculus can be engaged easily with instruments or will pass spontaneously. The usual procedure is to attempt the passage of two No. 5 F ureteral catheters past the calculus to the renal pelvis under pentothal sodium anesthesia and frequently is successful. Low spinal anesthesia produces more relaxation and results in less straining.

If the two catheters pass the calculus with ease the catheters are removed and then, by use of a direct vision cystoscope, the chosen extractor is passed *gently* through the ureteral meatus. If trauma results, the attempt may end in failure or injury to the patient with, at times, serious consequences. A dilating type of extractor can be used to dilate the ureteral meatus or the ureter below or at the site of a calculus. Great caution must be used with this instrument because serious damage may be done if unusual force is applied, either in dilating the ureter or in passing the instrument through the ureteral meatus or past the calculus. The Johnson extractor, a plain manipulating instrument which by its passage produces the required dilatation, may be less dangerous agent in the hands of the majority of surgeons and should be used more often. Another instrument which is useful when a calculus is impacted in the intramural portion of the ureter is the spiral extractor or stone dislodger.

Great care and judgment must be exercised in determining the amount of traction to be used in bringing the extractor and engaged stone down the ureter. If undue traction is used the ureter may be so badly lacerated that nephrectomy has to be performed.

Much manipulation should not be carried out at any one time. If only one catheter can be passed beyond the calculus, it is well to leave this in place with the accompanying urethral catheter for 48 hours and then make further attempts to engage the calculus.

If the calculus has been removed, feel for fragments with one or more catheters, and if any such pieces are present they should be removed gently with traction on the catheters. Compare the calculus with the shadow seen in the roentgenogram in order to determine whether all of it has been removed. Two No. 5 F. ureteral catheters should be passed to the renal pelvis and a urethral catheter left in place. All of these should remain in place for 48 to 72 hours.

#### DYSMENORRHEA IS NOT DUE TO OBSTRUCTION (L. H. Brock, San Francisco, in *Jl. Amer. Med. Women's Assn.*, Dec.)

In the study of the mechanism of pain causation, neither anatomical deviations, uterine anteversion, retroversion, hypoplasia, nor stenosis of the os is important. All these are hereditary variants in the normal pelvic development

which cannot be correlated with dysmenorrhea.

The pain of functional dysmenorrhea is due to contractions of the uterus. Studies of uterine motility in the woman with painless menstruation and in the patient with dysmenorrhea are identical. The occurrence of dysmenorrhea coincides with the phase of maximum uterine motility. In the patient with primary dysmenorrhea, normal uterine contractions during the phase of maximum amplitude reach consciousness, because of the lowered pain threshold in this individual. This psychic factor may be conditioned by the patient's subconscious reaction to the function of menstruation. Psychic trauma at the time of onset monthly recurring associates fear and anxiety with menstruation and a vicious cycle is established. From this evolves the syndrome of fear, tension and pain.

Successful therapy can be achieved only by evaluation of the organic and psychic make-up of the individual. The multiplicity of therapeutic measures relieving dysmenorrhea, some rational, others purely suggestive, support this psychogenic concept. The prolonged suppression of ovulation by estrogens or androgens abolishes pain by the absence of the "luteal phase" of myometrial contractions. The temporary effect of this type of therapy makes it of questionable value. Pre-sacral sympathectomy may block the pathway by which pain stimuli reach the sensorium, but this radical procedure is seldom indicated.

The physiology of menstruation as a normal function must be explained as a basis of re-education of the patient. Adequate pain-relieving medication, increased carbohydrate intake, physical therapy with exercise and relaxation, help by restoring self-reliance. Psychotherapy by suggestion may be effective in the relief of fears, anxieties and tensions. Underlying psychosomatic factors may be discovered and effectively removed, thereby raising the pain threshold level. Hypnosis, hypnoanalysis, and psychoanalysis offer valuable therapeutic approaches if the psychosomatic entity of dysmenorrhea is recognized.

## ORTHOPEDIC SURGERY

JAMES H. CHERRY, M.D., *Editor, Asheville*

### CONGENITAL CLUBFOOT

TO MOST practitioners congenital orthopedic deformities is a very dull subject indeed; nevertheless, the frequency of the various deformities is of such magnitude that the kindly, intelligent advice given to the bewildered parents by the family physician at the earliest opportune moment will often prevent a great deal of agony both on the part of the family and the deformed youngster.

There are two principal types of clubfoot: (1) the turned-in variety (talipes equinovarus) and, (2) The heel-up type (talipes calcaneovalgus). The former is the more common, occurring in one of every 1000 births (unilateral or bilateral).

In the treatment of the varus type, there are four dicta to emphasize to the parents from the onset: (1) that the condition can be corrected if treatment is started early, (2) that treatment must be carried out over a long period of time, (3) that the child will have to be observed even after correction is obtained, often until adolescence is reached, (4) that treatment should be carried out by a competent orthopedist. There is now no excuse for a deformed child to grow up without be-

ing treated by someone qualified. If the financial status is such that private care cannot be afforded, the child should be referred to a Crippled Children's Clinic where competent attention and care will be given free. These clinics are strategically placed throughout the states of our nation and are within the reach of all, regardless of race or color.

By initiating treatment early, we mean just that! Usually within a week or ten days after birth, the baby's skin will allow the application of corrective plasters. So far, the author has found no improvement over the plaster-cast method of treatment in the early cases. This usually entails the re-application of cases every seven to fourteen days and with each application the foot is manipulated a small degree nearer to the normal position, first correcting the varus, then the inversion of the os calcis, and finally the foot-drop. To obtain correction is not enough—over-correction must be reached and the foot held in this position for a series of plasters, the number depending on the surgeon's judgment. Four to six months is usually required to reach the over-corrected stage. The Canadians have used the Dennis Browne splint both to obtain correction and as a follow-up agent after correction is obtained. We have found the Sabel pre-walker club-foot shoes very useful as a follow-up to plaster correction. These shoes should be worn at all times except during the daily bath and during a prescribed two-hour period of the day when the child is allowed to play barefoot in an effort to have him exercise the weakened peroneal muscles.

The optimal period for recurrence is at the time the child starts walking and during the following two years. Frequently, it is necessary to resort again to casts, and often surgical lengthening of the heel cord and capsulotomy of the posterior ankle joint becomes necessary. There are two other surgical procedures which are occasionally indicated before the age of ten: (1) osteotomy of the tibia (and sometimes fibula) to correct persistent internal tibial rotation, (2) transplantation of the anterior tibial tendon into the peroneal group when weaknesses of the latter persists. If deformity is present when the child reaches the age of ten, then surgical correction by osteotomy and arthrodesis through the medio-tarsal joints is often necessary—lengthening the heel cord at the same time as warranted. The latter procedure is contraindicated before ten because the cartilaginous bones usually will not hold a good surgical correction; furthermore, the growth of the foot may be appreciably affected if this procedure is carried out before this age.

AT THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION, held at St. Louis in 1854, Dr. N. S. Davis exhibited a specimen of dried milk which had been placed in his hands and which was represented to be capable of pre-

serving all the qualities of the milk perfectly for any length of time.

All the railroads, except the New York and Hudson River Railroad, granted to the members of the Association free passage to their homes.

ON MAY 6TH, 1853, the day after the adjournment of the Sixth Annual meeting of the Association held in the city of New York, a train passing through Norwalk, Conn., fell into the Norwalk River through an open drawbridge. Forty-four passengers were deprived of life, among them seven physicians returning from the convention.

## INTERNAL MEDICINE

GEORGE R. WILKINSON, M.D., *Editor*, Greenville, S. C.

### THE TREATMENT OF ACUTE OCCLUSION OF THE EXTREMITIES WITH SPECIAL REFERENCE TO ANTICOAGULANT THERAPY

ACUTE ARTERIAL OCCLUSION of the femoral or brachial arteries by embolism or thrombosis is a serious emergency. Delayed, inadequate or wrong treatment often results in extensive gangrene. It is manifested by severe pain pallor and coldness of the affected extremity, collapse of its superficial veins; maybe partial or complete loss of motor function; and cessation of arterial pulsation below the point of occlusion.<sup>1</sup>

Treatment should be started immediately; the extremity should *not* be elevated, *nor* heat applied to the involved part.

The use of the Sanders oscillating bed—the maximal low foot position and the minimal low head position—is superior to intermittent suction and pressure and intermittent venous occlusion. If such a bed is not available, the head of the bed should be elevated 12 to 15 in.

Room temperature should be kept between 80 and 85° F.; papaverine hydrochloride is given in 0.5 gr. doses intravenously, and 1.5 oz. of whisky q. 4 h. to produce vasodilation. If the papaverine is not effective after the first dose, subsequent doses are rarely effective.

The plan for anticoagulant therapy is 50 mgm. heparin q. 4 h.; 4 h. and 300 mg. dicoumarol by mouth *immediately*, and 200 mg. on each succeeding, so long as prothrombin is greater than 20% of normal. Blood is withdrawn for the test each day, three hours after the intravenous injection of heparin q. 4 hours; and 300 mg. dicoumarol by falls below 20% of normal the administration of heparin is to be discontinued.

If this plan of medical treatment is instituted early, it is usually effective both in terminating the arterial spasm and in preventing further thrombosis. If the arterial spasm does not disappear within 12 hours of treatment, the sympathetic ganglia supplying the affected extremity should be blocked with a local anesthetic. If this also fails to release

<sup>1</sup> N. W. Barker *et al.*, Rochester, Minn., in *Minn. Med.*, Mar.

arterial spasm and the limb has shown no improvement in arterial circulation, embolectomy or thrombectomy should be seriously considered.

### THE MECHANICAL NOT THE MOST IMPORTANT EQUIPMENT FOR THE CARDIOLOGIST

WHITE<sup>1</sup> speaks out firmly against the overemphasis that so many doctors place on the electrographic findings in arriving at a diagnosis. He says all the most elaborate equipment, and all the skill in the use of that equipment may fail in obtaining answers to many of our most important questions in cardiology.

He believes the most important consideration is the *range of the normal*, wherein two factors play the major role: 1) inheritance which predetermines to a large extent the size and shape of heart, its electrocardiographic pattern, its autonomic nerve control, blood-pressure level and reaction; and 2) environment which can alter appreciably by the interaction of various factors of strain or their absence the inborn characteristics. White believes it probable that there is characteristic family coronary tree, which may be in part responsible for the common affliction with, or even commoner escape of many families from angina pectoris and myocardial infarction.

Going on to larger aspects of cardiology; White says the athlete in training tends to have a slow heart rate at rest, often in the 50's and the 40's, the resident of high altitudes develops a compensatory polycythemia, cyanosis, clubbing of the fingers, a barrel chest, and pulmonary emphysema. Rheumatic fever and rheumatic heart disease have a very clear limitation to a small group of persons who react, as if in an allergic way, to the streptococcus by developing rheumatic fever. It is an inherited predisposition, not active during the first few years of life, but at its peak from five to 12. Unfavorable environment and climate act in a less important way of exposing the susceptible person to a greater number of virulent bacteria under conditions of poorer general health.

Subacute bacterial (infective) endocarditis likewise does not attack everyone with congenital cardiovascular defects or the lesser rheumatic valve lesions. There may be some individual lack of resistance to *Streptococcus viridans* or a tendency to thrombus-formation on scarred valves or congenital defects.

Many persons with syphilis never have any involvement of the aorta; others have aortic walls vulnerable to light infections. In such cases strenuous effort favors the development of dilatation, aneurysms, and eventual rupture; while antisiphil-

<sup>1</sup> P. D. White, Boston, in *Jl. Mt. Sinai Hosp.*

itic treatment and avoidance of strain favor longevity. In some regions, Arabia for example, syphilis, though almost universal, seems to be so attenuated that there occurs little serious involvement of the aorta.

One of the most striking instances of familial tendency to heart disease is the essential hypertensive state. Overweight, nervous strain and excessive use of tobacco will aggravate existing hypertension or the tendency thereto, but they are not the fundamental answer. An inherited tendency to arteriolar spasm may be the answer. Heavy sedation given before the establishment of extensive arteriolar sclerosis will reduce the pressure as a rule to normal or almost normal levels. Extensive lumbodorsal splanchnic sympathectomy will control the pressure in the majority of cases of hypertensive disease in the young. Just what is this inherited fault in man? Can it be bred out of the human race or in some other way prevented?

Two men living exactly the same life, one will develop angina pectoris, myocardial infarction or ecg. changes in middle age; the other will live to be very old without any of this? Why? We haven't got very far along the trail. Of 100 cases in persons under the age of 40 years analyzed a few years ago, 96 were of men and four were of women. The more robust and masculine men, often star athletes, are the more prone to develop coronary heart disease at an earlier age. Two other important factors that play a role in individuals or families: 1) the fullness of the coronary arterial tree with respect to richness of branches and anastomotic or potential collateral circulation; and 2) the metabolism and deposition of the cholesterol fats which in many cases appear to be the basic material behind the development of a crippling degree of coronary atherosclerosis.

In the study of the cardiovascular system and its diseases close attention must be paid to man himself; as a narrator of his own story; as an organism with symptoms that are sometimes more delicate evidence of disease than any produced by the most sensitive apparatus as yet invented; as an intelligent being who can cooperate with us, not only in his own treatment but also in our clinical researches and a long follow-up, and as a vital factor through inherited and acquired characteristics in the development of the various kinds of heart disease. The study of heredity alone promises rich yield, and this is but one of many opportunities in the analysis of man himself.

#### ENLARGEMENT OF THE HEART IN HYPERTENSION

(M. Ch. Ehrstrom, in *Am. Med. Internae Fenniae* (Finland), Vol. 35 Fasc. 2, 1946)

A statistical investigation of the causes of enlargement of the heart in hypertension reveals that the duration of the elevated blood pressure is of no import in the development of enlargement of the heart.

Enlarged hearts are somewhat more often observed in aged people and in men. Jointly with increasing blood pressure values, the statistical frequency of enlarged hearts increases. These factors are, however, of no definite importance regarding the size of the heart.

No statement of infectious diseases being influential have been made.

A causal connection between enlargement of the heart and sclerosis of the vessels seems to be present, in that an enlargement of the heart may develop more often in those cases of hypertension that are followed by sclerosis of the vessels.

A great number of hearts are not affected by the collaboration of old age, sclerosis, and high blood pressure of prolonged duration. Enlargement of the heart does not seem to develop gradually, during the course of hypertension. It seems to occur suddenly, in stages at irregular intervals.

## SURGERY

### POINTS IN DIFFERENTIAL DIAGNOSIS OF ACUTE DISEASES IN THE ABDOMEN

SOME very practical points in differentiating a few of the commoner acute abdominal diseases one from the other, and in helping the patient, are offered by Thorek.<sup>1</sup>

The disease in a middle-aged woman that will produce pain so severe as to require an opiate is acute gall-bladder disease, until proved otherwise. The history reveals that there are certain specific foods that the patient cannot digest: four primary offenders are fried and fatty foods, raw apples, cucumbers, and cabbage.

The complaint is one of pain; a constant pain is due to edema, but colicky pain is caused by obstruction. It is unwise to treat obstructed lesions conservatively, since these are cases which result in early gangrene and perforation. Morphine should not be used in gall-bladder disease because it is a smooth-muscle contractor; by increasing muscle tonus, morphine may aggravate or provoke gall-bladder pain and colic. The drug still has its place, namely, to prevent shock. These patients are treated first thus: one breaks an amyl nitrite bead and lets the patient inhale the vapors; 1/100th grain of nitroglycerin is placed under the tongue, and sodium amytal, 3 gr., is given by mouth. If this gives no relief, then a hypodermic of 1/20th grain of dilaudid and 1/100th grain nitroglycerin. Should these measures fail give papaverine or demerol.

Acute appendicitis does not give right-rectus rigidity. Because the reverse is taught in most schools and text books, the point should be clarified. It is impossible for an individual to contract his right rectus muscle without contracting the left; therefore, when pressure is made upon an inflamed area, both rectus muscles contract. When

1. Philip Thorek, Chicago, in *Jl. Indiana State Med. Assn.*, Dec.

# SOUTHERN MEDICINE & SURGERY

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*As is true of most Medical Journals, all costs of cuts, must be borne by the author.*

## THE COMING TRI-STATE MEETING

It is a pleasure to announce to our members that a program of extraordinary value and interest is well on its way to completion.

Right here it is necessary to announce that the meeting will be held at Sedgefield Inn, seven miles from Greensboro, instead of at the O. Henry Hotel.

We are counting on having an address from a high Naval Medical Officer on Atomic Energy and Our Future Health. Could one conceive of a subject of greater interest, of greater concern, to all of us? It makes my skin prickle and my hair raise to think of the possibilities. And I dare say all our members and all other thoughtful doctors will share this feeling and be eager to learn directly from one in best position to know all that may be learned now of the awful (in the right sense of that much misused word) prospect.

Dr. Matthew Moore, of Philadelphia, will be with us again to tell us further about pain and its significance.

Dr. James W. Watts will come to post us to date on the wonders of lobotomy, especially on the relief of pain by this surgical marvel.

Dr. W. Halsey Barker, of Baltimore, will inform us on the recent great advances in the management of Cirrhosis of the Liver. Many will recall that when we last met at Greensboro Dr. Lewellys Barker was with us and made a large contribution to the occasion. We are counting on establishing the same cordial relationship with the son that the Tri-State so long sustained with the father.

Our own Dr. Wm. deB. MacNider will tell us what makes up The Good Doctor, and how each of us may be a good doctor.

Others of our members from Charleston, from Richmond, from Charlotte, from Columbia, from Durham, from Greenville, from Winston-Salem, from Monroe—from all over—will add to our fund of knowledge of how to find out what is wrong with our patients and how to make it right.

Many will remember the instructive clinics which have featured Greensboro meetings of this Association. Arrangements are being made for repetition of this feature.

Every member is being urged to do himself and his patients the good service of attending the meeting from start to finish. It is true there are lots of medical meetings, but "none of them takes the place of Tri-State," as Dr. Cyrus Thompson, "Cousin William" Warren, Dr. J. H. McIntosh, and a host of others oft proclaimed.

Come and partake of our good things, and bring along any of your doctor friends and neighbors who can be brought under good influence, whose constant aim is to do the uttermost for their patients.

## GETTING PATIENTS UP EARLY

PATIENTS are not being kept in bed nearly so long as they were ten or even five years ago. It is strange that this improvement in practice was so long delayed.

Rather, since there is reason to believe that early ambulation for patients was the general practice up to a hundred years ago, and so the "keep-'em-in-bed" rule was a retrogression, in getting our patients up early we are just catching up with our grandfathers in medicine.

Dr. William H. Taylor, the wisest man I ever knew, kept right up with every development in the sciences that relate particularly to medicine. Yet he was oft heard to say: "We are prone to exclaim of some great *improvement*. What would the ancients say to this? When, if the ancients could say anything, it likely would be something crushingly uncomplimentary."

Somewhere I have read that when Ephraim McDowell went, the next day after his famous "ovarectomy," to change the dressings, he found Mrs. Todd had arisen and made her bed. Apparently he thought this would do her no harm. After a shorter time under his care than she would be required to stay in a hospital today, she mounted her horse and rode back to her home, ninety miles away!

Indeed, until it became the rule for sick folks to go to hospitals, strict confinement to bed was practically non-existent except for (1) neurasthenics being given the Weir Mitchell "rest cure," and (2) those so weak they could not get up of themselves. In those days, when the doctor said, "You must stay abed," he did not mean that the patient should not get up to the toilet, to have his bed made, to sit by fire or window, whenever he was so inclined. One hardy Tarheel patient of my own, way up in his seventies, sick or well, winter or summer, refused to give up his long habit of walking out in his nightshirt to a tree in the yard when he needed to urinate in the night time.

Since we are returning to the wisdom of former times, it is interesting to learn that our own Dr. Hubert Royster discovered for himself that patients got along better when allowed to move about freely in bed, and to sit up and get up early; and that he adopted this practice some twenty-five years ago.

In a letter to *The American Journal of Surgery*, which was published in its issue for August of last year, Dr. Royster writes on early ambulation. It will be information to most of us that when he started practice it was the rule to keep all patients who had been operated upon for hernia in bed for four weeks—subsequently reduced to three weeks, then two weeks, then ten days. It is remarked that some surgeons were using the early-rising and early-home idea to draw attention to themselves.

It was not until 1922, when a surgical service was established at the North Carolina State Hospital for the Insane, that Dr. Royster became convinced of the relative harmlessness of permitting patients, even following capital operations, to get up and around in the early postoperative hours. More through necessity than from choice these patients were permitted to do as they pleased. Bodily restraint of any kind was forbidden; in a few cases canvas sleeves, covering the hands were employed to prevent tearing off of dressings, and defilement of incisions.

A patient who had had an interposition operation for uterine prolapse performed that afternoon got out of bed, went to the bathroom and then walked up and down the corridor. During the two weeks' convalescence she was up or in bed as she willed. The patient remained in the institution for a long period and was examined as late as five years after operation. She remained cured of her prolapse. Thirty-odd other patients were subjected to the same procedure, submitted to the same post-operative regimen and came through with no untoward effects.

In all other operative patients at the State Hospital, extending over a period of seventeen years, including operations on the gallbladder, stomach, intestines, chest, perineum, for hernia and hemorrhoids, etc., the same lack of restraint was practiced. In no instance was there any imperfect result which could be attributed to early ambulation.

Dr. Royster well says that it would be difficult, indeed, to persuade all our patients to get out of bed on the day of operation or even in the first few days. To them the thought would be painful, frightening, out of the question. In many instances it is impossible to induce them to move about in bed, much less to stand on their feet or sit in a wheelchair, during the first week after operation.

His years of experience in the surgical service at the State Hospital encouraged Dr. Royster to proceed further with early mobilization and ambulation. Up to the time of his retirement in 1938 he continued to urge all his patients in general hospitals to adopt it whenever he possibly could. Many of them would not even attempt to get out of bed and stand upright on the day of operation.

This renowned North Carolina surgeon, in concluding his communication, says frankly that we have all heretofore routinely kept most of our patients in bed too long.

About thirty-five years ago some mid-West surgeon wrote under the caption, "One Inch—One Minute—One Day," an article recommending the removal of the appendix vermiformis through a one-inch incision in one minute, and that the patient be kept in bed only one day. I have tried vainly to find the article. Perhaps this was one

of the instances of surgeons drawing attention to themselves in a way regarded by some as disingenuous, if not reprehensible.

There is no doubt in my mind that medical patients are kept, or stay, in bed and in hospital in excess of their need, to just about the same degree as the surgical patients.

If nobody were sent to a hospital who would be just as well off at home, and if every hospital patient were got out of bed and out of the hospital just as soon as could be done without any detriment to his or her health and happiness, the hospital beds already provided in North Carolina, or any other State, would amply meet the demand. This is except for the need for a few general hospital beds in a very few of the rural counties, and for many additional beds in all the State's hospitals for those called insane. The State hospitals for the mentally diseased need a great many beds; and it is earnestly to be hoped, fervently to be prayed, that money so almost desperately needed for that purpose will not be diverted to the grandiose and highly impractical project of providing a huge hospital and a four-year medical school at Chapel Hill.

## NEWS

### THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST COLLEGE

Announcement was made on January 2nd of the establishment of a \$1,700,000 endowment fund by Mr. James A. Gray of Winston-Salem. The principal beneficiary is the Bowman Gray School which was awarded \$900,000 of the amount. Mr. Gray is Chairman of the Executive Committee of the R. J. Reynolds Tobacco Company and a brother of the late Bowman Gray.

On December 29th, 1946, Dr. C. C. Carpenter, Dean, announced a gift of \$60,000 from Mrs. Nathalie Gray Bernard. This fund is to be used in further support of the development of the Department of Neuropsychiatry. Mrs. Bernard had previously given Graylyn Estate, valued at \$1,000,000, to be used for that purpose, and her son Gordon Gray had previously made a gift of \$125,000 to support the development of psychiatry.

Dean Carpenter also announced faculty changes made during the year 1946, the addition of twenty new members; the return of two from a year's leave of absence and of five from the armed services, and the promotion of five others.

### UNIVERSITY OF VIRGINIA

The Thirteenth Annual Post-Graduate Course in Ophthalmology and Otolaryngology was held at the University of Virginia Medical School on December 9th-12th. The following lectures appeared on the program:

Dr. Bernard Samuels, Surgeon and Pathologist, New York Eye and Ear Infirmary

Dr. E. Burchell, Director Eno Laboratory, New York Eye and Ear Infirmary

Dr. Alan C. Woods, Ophthalmologist-in-Chief, Johns Hopkins Hospital, Baltimore

Dr. A. D. Ruedemann, Cleveland Clinic.

Dr. S. Judd Beach, Ophthalmologist, Maine Eye and Ear Infirmary, Portland.

Dr. Dean M. Lierle, Professor of Otolaryngology and Oral Surgery, University of Iowa

Dr. Gabriel Tucker, Professor of Broncho-Esophagology, Graduate School, University of Pennsylvania.

Dr. John Marquis Converse, New York City

Dr. J. M. Robison, Professor of Otolaryngology, University of Texas

Mr. J. M. Mullendore, Asst. Prof. of Speech Education and Director of Speech Clinic, University of Virginia

Dr. Francis H. McGovern, Danville, Virginia

Dr. George Cooper, Jr., Assoc. Prof. of Roentgenology, University of Virginia

Dr. G. Slaughter Fitz-Hugh, Asst. Prof. of Otolaryngology, University of Virginia

Dr. Fletcher D. Woodward delivered four lectures before the Post-graduate Medical Assembly of South Texas December 3d-5th at Houston, Texas. He spoke before the Peninsula Academy of Medicine on December 16th at Newport News, Virginia.

On December 13th, Dr. Henry B. Mulholland, Professor of the Practice of Medicine, spoke before the staff of the Piedmont General Hospital at Altavista, Virginia, on the Anti-biotic Drugs.

On January 6th Dr. Fletcher D. Woodward, Professor of Otolaryngology, read a paper, prepared by Dr. Woodward and Dr. Thomas Holt, on the Use of Soluble Gauze (Oxidized Cellulose) in Otolaryngology, before the Southern Section of the American L. R. and O. Society, meeting at Miami.

Dr. Woodward made two talks on Infections and Tumors of the Maxillary Sinus before the Winter Postgraduate Course in Otolaryngology and Ophthalmology, Graduate School of Medicine, University of Florida, Miami, on January 7th and 8th.

### DUKE UNIVERSITY SCHOOL OF MEDICINE

Dr. Eugene A. Stead took up his duties as Professor of Medicine on January 1st, filling the professorship held by Dr. Frederic M. Hanes, whose untimely death occurred last March.

A Veteran Refresher Course has been in operation since V-J day. The facilities of the hospital have been turned over to the Veterans. In addition the various services are using as many veterans as residents as there are places available.

Under the direction of Dr. Norman F. Conant the Fungus Disease Registry is increasingly active. This registry supplies sets of teaching cultures for medical schools, maintains a diagnostic service that includes culture, histopathologic and serologic studies. The service is financed by a grant from the American Foundation for Tropical Medicine. A month's course in Mycology is to be offered by this department during the summer of 1947. The exact date will be announced later.

At the meeting in Philadelphia of the Association of Medical Illustrators, Elon H. Clark was elected chairman of the Board of Governors, and Orville A. Parks was appointed chairman of the Southeastern Division.

Dr. George A. Watson of the Department of Pediatrics received a scholarship for the fall Graduate Instructional Course in Allergy at Jefferson Medical School, Philadelphia.

A special medical research building, making available 22,000 feet of animal and laboratory space is now well along in construction and should be ready for occupancy about March 1st.

As an experiment in graduate teaching, the Department of Anatomy is offering a review of anatomy on a graduate level using motion pictures, lantern slides, and other visual

aids. This review is offered as a part of the specialty program in Neuropsychiatry and Orthopedics. The course is conducted as round-table discussions with panels including staff clinicians especially interested in the region of anatomy under discussion.

Archie E. Millis has left the Duke University Hospital Pharmacy to accept a position as Chief of Pharmacy Section, Branch No. 5, Veterans Administration, Atlanta. Mr. Millis served as a Captain with the 65th General Hospital in England during the war.

Dr. Raymond S. Crispell left Duke University on November 4th to assume the post of director of the Division of Neuropsychiatry for Branch No. 5 of the Veterans Administration with headquarters at Atlanta. In addition he will be teaching at the Emory University School of Medicine and the Georgia School of Technology.

### DUKE UNIVERSITY

#### ANNOUNCEMENT OF A COURSE IN MEDICAL MYCOLOGY

A month's course in Medical Mycology, under the direction of Dr. Norman F. Conant, is to be offered at Duke University School of Medicine and Duke Hospital, Durham, N. C., during July, 1947. The course will be offered every day in the week, except Sunday, and has been designed to insure a working knowledge of the human pathogenic fungi within the time allotted.

Emphasis will be placed on the practical aspects of the laboratory as an aid in helping establish a diagnosis of fungus infection. Insofar as possible and as patients become available, methods of collecting materials in the clinic for study and culture will be stressed. Work with patients, clinical material, cultures and laboratory animals will serve as a basis for this course. Also, an opportunity to study pathologic material, gross and microscopic, will be given those whose previous training would allow them to obtain the greatest benefit from a study of such material.

A number of applicants for the course will be limited and the applications will be considered in the order in which they are received. An attempt will be made, however, to select students on the basis of their previous training and their stated need for this type of work.

A fee of \$50.00 will be charged for this course, upon the completion of which a suitable certificate will be awarded. Please direct inquiries to Dr. Norman F. Conant, Duke University School of Medicine, Durham, N. C.

### FOURTH ANNUAL MEDICAL AND SURGICAL SYMPOSIUM SPONSORED BY WATTS HOSPITAL

Durham, N. C.

Wednesday, February 12th, 1947

11:00 A. M. Clinico-Pathological Conference, presented by Sidney Farber, M.D., and Charles D. May, M.D., of the Harvard Medical School.

2:30 P. M. "Surgical Aspects of Diabetes," Leland S. McKittick, M.D., Boston.

3:30 P. M. "Recent Advances in the Study and Treatment of Diabetes," Howard F. Root, M.D., Boston.

8:00 P. M. "Viral Hepatitis," Joseph Stokes, Jr., M.D., of the University of Pennsylvania Medical School.

9:00 P. M. "Pericardial Scars," Francis C. Wood, M.D., of University of Pennsylvania Medical School.

Thursday, February 13th

11:00 A. M. Clinico-Pathological Conference, presented by Col. J. E. Ash, M.D., Army Institute of Pathology, and Wallace Yater, M.D., Washington.

3:30 P. M. "Some Clinical and Physiologic Aspects of Portal Cirrhosis," Albert M. Snell, M.D., of the Mayo Clinic.

8:30 P. M. "The Current Status of Calcium Penicillin in

Beeswax and Peanut Oil," Monroe J. Romansky, M.D., of the George Washington University School of Medicine.

8:00 P. M. "The Present Status of Effective Specific Therapy Based on Exact Hematologic Diagnosis," Charles A. Doan, M.D., Dean, College of Medicine, Ohio State University.

#### PORTRAITS OF DR. MACNIDER AND DR. BULLITT PRESENTED

Ceremonies for the presentation to the University of North Carolina of impressive portraits of two eminent members of the Medical School faculty were held December 19th in the auditorium of the Medical School of the University of North Carolina.

The portraits, painted by John C. Johansen, of Dr. William deB. MacNider, former Dean of the School and internationally known pharmacologist, and of Dr. James B. Bullitt, head of the Department of Pathology, were presented to the University by Medical School alumni.

Dr. William Copridge of Durham made a brief talk on the career of Dr. MacNider, and Dr. Hugh Smith of Greenville, S. C., spoke on Dr. Bullitt's career.

Chancellor Robert B. House accepted the portraits for the University. The presentations were made by Dr. George Carrington of Burlington, president of the medical alumni.

THE MARLBORO COUNTY (S. C.) MEDICAL SOCIETY held its Twenty-sixth ANNUAL NEW YEAR'S MEETING at Bennettsville Thursday, January 9th.

#### Program:

Introduction of President of South Carolina Medical Association—Dr. James C. McLeod, Florence, S. C.

Clinical-Pathological Conference—Drs. Elias Faison and Paul Kimmelstiel, both of Charlotte, N. C.

"Cardiac Surgery"—with colored moving picture demonstration—Dr. H. H. Bradshaw, Chief of Surgery, Bowman Gray School of Medicine, Winston-Salem, N. C.

#### OFFICERS ELECTED BY BEAUFORT DOCTORS

Dr. C. F. Sale was elected president of the Beaufort County Medical Society for 1947 at a recent meeting. Other officers for the coming year are Dr. Clark Rodman, vice-president, and Dr. D. E. Ford, secretary.

THE PITT COUNTY (N. C.) MEDICAL & DENTAL SOCIETY held its annual Ladies' Night meeting Dec. 12th at the Rotary Club Building, Greenville. The meeting was largely attended.

Dr. E. P. Brooks, the retiring president, extended a welcome to the doctors' wives. Mrs. D. L. Moore, in a very happy manner, responded to this welcome.

Dr. J. M. Mewborn, Farmville, was installed as the new president of the society and in his remarks of acceptance took occasion to mention the fine relationship existing between the local health department and the physicians and dentists of Pitt County.

No business was transacted except the installation of the president, after which the meeting became a social affair.

Dr. B. McKay Johnson, Greenville, is the new vice-president and Dr. F. F. Irons, Greenville, secretary and treasurer.

The hosts were: Drs. Fred Irons, Malene Irons, E. B. Aycock, D. B. Armistead and Dan Wright, who provided a banquet for the occasion.

#### CABARRUS COUNTY (N. C.) MEDICAL SOCIETY

Dr. Ira A. Yow, of Concord, is the new chief of staff at the Cabarrus Hospital, and Dr. A. L. Barringer, of Mt. Pleasant, is the new president of the Cabarrus County Medical Society.

Other staff officers are Dr. M. S. Tuttle, of Kannapolis, assistant chief of staff, and Dr. R. H. Moorefield,



secretary and treasurer.

Serving with Dr. Barringer for the medical society will be Dr. E. White, of Kannapolis, vice-president, and Dr. Fred T. Craven, of Concord, secretary and treasurer.

Chosen as delegates to the convention of North Carolina Medical Society were Dr. A. E. Barnhardt, of Kannapolis, and Dr. D. E. Yow, of Concord.

DR. FRANK WOOD has become Medical Director and Surgeon-in-Chief of the Chowan County Hospital at Edenton. Dr. Wood, a native of Edenton, has been a staff member of the hospital in Marion for more than ten years.

DR. J. RUSH SHULL and DR. JAMES E. HEMPHILL announce the association of DR. HAROLD S. PETTIT, diplomate American Board of Radiology, recently of the Resident Radiological Staff, Harvard University.

Professional Building, Charlotte, N. C.

BROADOAKS SANATORIUM, Morganton, N. C., announces the release from active duty with the Medical Corps, Army of the United States, of James Taylor Vernon, M.D., and his association with the medical staff of Broadoaks Sanatorium.

DR. MARGARET D. CRAIGHILL, a native of Southport, N. C., and formerly consultant for women's health and welfare to the Army's Surgeon-General, has been appointed as the consultant for the medical care of women veterans, the first position of its kind in the Veterans Administration.

Before joining the Army, Dr. Craighill was dean of the Women's Medical College of Pennsylvania in Philadelphia. She received her bachelor of arts and master of science degrees from the University of Wisconsin, her doctorate from Johns Hopkins University School of Medicine in 1924. After graduate work at Johns Hopkins and Yale, she established private practice as a gynecologist in Greenwich, Conn.

DR. J. ROY HEGE, of Raleigh, leaves the State Health Department to become Director of Public Health in Cabarrus County. He was formerly head of the Forsyth County Health Department. He will succeed Dr. Frank E. Wilson, who resigned to join the Red Cross.

DR. RALPH L. MCCARTY, a graduate of Tulane, 1942, is now associated with Dr. W. M. Scruggs and Dr. L. E. Fleming, Charlotte, in the practice of surgery.

DR. FRANK S. JOHNS, of Johnston-Willis Hospital, Richmond, was elected president of the Southern Surgical Association December 12th at a closing executive session of the association's annual convention.

Naved vice-presidents were Drs. Charles Reid Edwards, of Baltimore, and Frank Wilson, of Birmingham, Ala.

THE NALLE CLINIC announces the addition to its Urological Department of Dr. Brodie C. Nalle, Jr., lately Instructor in Urology at the University of Virginia.

RALPH V. ELLIS, M.D., announces limitation of his practice to Allergic Disorders. Dr. Ellis is a Fellow of the American College of Allergy and the American Academy of Allergy, and Associate in Medicine and Lecturer in Allergy at the Bowman Gray School of Medicine. Formerly he was Associate Professor of Medicine, University of Minnesota, and Chief of Allergy Clinics of the University of Minnesota and Minneapolis General Hospitals. Offices in the Jefferson Building, Greensboro, N. C.

## MARRIED

Dr. Marguerite E. Lazenby, Statesville, N. C., and Dr. Jerome P. Williams, Nashville, Tenn., were married December 18th at the First Baptist Church, Statesville.

Dr. Edward S. Bivens, of Concord, attended Dr. Williams as best man. Ushers were Dr. Durwood Stallings, Winston-Salem; Dr. J. Sam Holbrook, Harold R. Wilson and Fred Bunch, Jr., of Statesville.

Dr. Courtney David Egerton and Miss Nancy Miller Uphaw, both of Raleigh, were married on January 4th. Dr. Ederton will serve his internship in the Episcopal Hospital in Philadelphia.

Dr. Kenneth Petretti, of New York City, and Miss Virginia Mae Fulk, of Pilot Mountain, N. C., were married on December 28th.

Dr. Jaquelin Marshall Harrison, of Richmond, and Miss Alice Ridgely Fisher, of Baltimore, were married on January 4th.

Mrs. Hannah McNeill Stack of Buie and Fayetteville, and Dr. Roscoe D. McMillan of Red Springs were married January 5th.

Dr. William N. Henderson of Maplewood, N. J., and Miss Doris Edens of Durham were married on December 31st. Dr. Henderson is a graduate of Duke Medical School and his bride of the School of Nursing. Dr. Henderson is serving his internship in Baltimore.

Dr. Leon Asbby Adams of Philadelphia and Miss Jean Crichton of Warrenton, N. C., were married on December 22nd. Dr. Adams is serving his internship in the Philadelphia General Hospital.

## DIED

Dr. Joseph Bennett Riddle, 76, well known throughout Burke and adjacent North Carolina counties as a surgeon and general practitioner, died in Grace Hospital, Morganton, January 1st. He had been in declining health for over a year and had been seriously ill for several weeks.

Dr. Riddle had long been a prominent figure in the medical life of his section. A native of Yancey, he came to Burke in 1898, after graduation from Vanderbilt. He settled at Bridgewater but removed to Morganton in 1907 as the first surgeon of the county. He was active in the affairs of Grace Hospital, being chief of staff of that institution until his retirement a year ago. He had a number of business interests and was senior deacon in the First Baptist Church of Morganton.

Dr. Flavius Oghurn Plunkett, 60, renowned Lynchburg, Va., obstetrician and gynecologist, died December 18th, after an illness of only a few hours.

Born in Greensboro, N. C., he was graduated from Liberty Normal College, Liberty, N. C., and graduated from the Medical College of Virginia in 1911.

Dr. Lewis Holladay, 77, once a member of the State Board of Medical Examiners and veteran Orange County physician, died unexpectedly at his residence at Orange, Va., December 10th.

Dr. Holladay, who had practiced medicine at Orange only one month short of 50 years, was Orange County coroner.

Dr. John William Preston, 79, a practicing physician at at Roake, Va., since 1909, died unexpectedly at his home January 1st.

Dr. Preston was a member of the board of directors of

Roanoke Hospital and served as chief of staff of the hospital in 1925. In 1928 he was elected president of the Medical Society of Virginia. He was a past president of the Virginia Section of the American College of Physicians, a diplomate of the American Board of Internal Medicine.

Dr. Preston, a member of the Board of Medical Examiners since 1913 and secretary-treasurer since 1917, was a native of Franklin County. He was educated at Milligan College, Milligan, Tenn., and at the College of Physicians and Surgeons, Baltimore, where he graduated in 1893. He studied further at the University of Pennsylvania, at the University of London and in Germany.

The Board of Directors of THE EYE-BANK FOR SIGHT RESTORATION, INC., New York City, announce the following scholarship and fellowship awards and appointments:

Dr. Herbert M. Katzin of New York has been put in charge of the Laboratory for Ophthalmic Research at THE EYE-BANK FOR SIGHT RESTORATION, INC.

Dr. Frank Constantine has been granted a Fellowship to pursue studies in relation to corneal vascularization.

Dr. Arnold Forest of the Army Institute of Pathology, Washington, D. C., has been granted a Fellowship for training in Ophthalmic Pathology with special emphasis on corneal pathology.

Dr. Milo H. Fritz of New York has been granted a Fellowship to continue studies in vitreous replacement and vitreous transplants.

#### ANNOUNCEMENTS OF ADVERTISERS

##### PENICILLIN CALCIUM TABLETS, SCHERING

Manufacturer: Schering Corporation, Bloomfield, New Jersey.

Composition: Compressed uncoated tablets containing 25,000 units of the calcium salt of penicillin and 0.3 gm. of trisodium citrate.

Indications: Staphylococci, streptococci, pneumococci, gonococci, meningococci and luteal infections.

How Packaged: Boxes of 12 tablets. Each tablet is protected by heavy aluminum foil enabling the patient to carry his daily dosage with him without noticeable diminution of penicillin potency.

*Squibb Penicillin in Oil & Wax* is now available in 1-c.c. double-cell cartridges. One cell contains sterile Aspiring Test Solution to insure against injection into a blood vessel. The other contains 300,000 units of penicillin calcium in purified peanut oil and bleached beeswax. The cartridge fits readily into a permanent, all-metal B-D cartridge syringe. It is readily injected through the 20-gauge needle when at room temperature. No troublesome withdrawing of suspension from vial or ampul into syringe. No danger of injection into blood stream. No unnecessary expense for a syringe that is used only once.

#### Deadline

May 1st, 1947, is the deadline for entering the \$34,000 prize art contest on the special subject of "Courage and Devotion Beyond the Call of Duty" (on the part of physicians in war and in peace). This contest is open to all M.D.'s in the Western Hemisphere. The exhibition will take place in conjunction with the A. M. A. Centennial Session at Atlantic City, June 9th-13th, 1947. For complete information, write or wire now to Francis H. Redewill, M.D., Secretary, American Physicians Art Association, Flood Building, San Francisco, California, or to the sponsor, Mead Johnson & Company, Evansville 21, Ind., U. S. A.

#### Oreton Price Reduced 20 Per Cent

A 20 per cent reduction in the price of Oreton (testosterone propionate) has been announced by Schering Corporation of Bloomfield and Union, New Jersey, world's largest manufacturer of pure sex hormones. Recent clinical investigations have demonstrated that in addition to being specific for testosterone deficiencies in the male and effective in several gynecological entities, Oreton is of great value in the management of the metastasis of breast carcinoma.

#### STREPTOMYCIN IS NOW AVAILABLE

The Civilian Production Administration has released Streptomycin for use in private practice. It is available from 1,600 depot hospitals established throughout the country. A physician who wishes to purchase streptomycin should apply to\* his local hospital for a supply of this new drug.

The National Drug Company of Philadelphia announces the establishment of a well staffed and fully stocked Branch Office and Warehouse at 15 Baker Street, N.E., Atlanta 3, Georgia.

Supplies of all pharmaceuticals, biologicals and biochemicals manufactured by this Company will be kept in stock to aid the distribution policy and materially expedite the service to their customers in the Southern states.

#### THE VAGINAL SMEAR

(J. V. Meigs, Boston, in *J. A. M. A.*, Jan. 11th)

The diagnosis of cancer of the cervix and of cancer of the endometrium can be made with a high percentage of accuracy by the vaginal-smear method. The diagnosis in patients with cancer of the uterus can be missed by this method if the tumor does not shed tumor cells. The method should be of tremendous value in the routine screening of patients either in the clinic or in the hospital.

A positive vaginal smear should not be regarded as an indication for hysterectomy. It should indicate that specimens for biopsy should be taken so that the pathologist may confirm the observations disclosed by the vaginal smear. This method should be interpreted by those trained in cytology and in the smear method of making a diagnosis.

IN THE DIFFERENTIAL DIAGNOSIS OF HEMATURIA, Dicumarol administration should be considered. The patient should be questioned about recently ingested drugs.

A 32-year-old man received 2,300 mg. of Dicumarol in seven days—3½ times the normal dose. Two days later, massive hematuria appeared. Synthetic vitamin K therapy was ineffective. Cessation of bleeding followed the transfusion of 1,000 c.c. of blood.—David Rosenbloom & J. J. Crane, Los Angeles, in *J. A. M. A.*, Dec. 14th.

#### ITEMS FROM THE MORTALITY REPORT OF THE CENSUS OF 1850

"Hives" was given as the cause of the death of 23 under one year of age and six between the ages of one and 10, in the State of Virginia. Intemperance is credited with carrying off 63; mania-a-potu, 9; venereal, five.

North Carolina figures are: hives, 52; intemperance, 23; mania-a-potu, 1; syphilis, 1; venereal, five.

South Carolina admits hives, 42; intemperance, 8; mania-a-potu, 5; venereal, 12.

(Since there is no mention made of diphtheria as a cause of death and all the deaths attributed to "hives" were of children, presumably these were diphtheria deaths.—Editor.)

# STREPTOMYCIN NOW IS AVAILABLE

*Physicians now may obtain adequate supplies of this remarkable new antibacterial agent, without restriction, from their local pharmacists and hospitals.*

## CLINICAL INDICATIONS

Streptomycin is effective in the treatment of: Urinary Tract Infections, Bacteremia, and Meningitis due to susceptible strains of the following organisms:

*Esch. coli*

*B. lactis aerogenes*

*Proteus vulgaris*

*Ps. aeruginosa*  
(*B. pyocyaneus*)

*Klebsiella pneumoniae*  
(*Friedländer's bacillus*)

### TULAREMIA

All *H. influenzae* infections

Streptomycin is a helpful agent also in the treatment of the following diseases, but its position has not been clearly defined:

Tuberculosis.

Peritonitis due to susceptible organisms.

Pneumonia due to *Klebsiella pneumoniae* (*Friedländer's bacillus*).

Liver abscesses due to streptomycin-sensitive bacilli.

Cholangitis due to susceptible pathogens.

Endocarditis caused by penicillin-resistant, streptomycin-sensitive organisms.

Chronic pulmonary infections predominantly due to streptomycin-sensitive flora.

Empyema due to susceptible organisms.



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## BOOKS

**ESSENTIALS OF NEUROPSYCHIATRY: A Text-book of Nervous and Mental Disorders**, by DAVID M. OLKON, S.B., A.M., M.D., Associate Professor of Psychiatry, College of Medicine, University of Illinois. Illustrated with 138 engravings. *Lea and Febiger*, Washington Square, Philadelphia. 1945. \$4.50.

The fundamental principles for the appraisal of mental disorders are well set forth. Throughout emphasis on the intimate relationship of mind and body, in health and in illness and all activities of man is evident. Opinions not in harmony with those of the author and others with which he agrees are given all proper consideration. The main purpose of the book it is said is to present in a reasonable compass and adequately the knowledge which has had sufficient verification of the problems in this field of the student, the general practitioner and the psychiatrist.

This book holds out promise of meeting a need which has been felt for a long while. It uses only sparsely the meaningless jargon which has its counterpart in the substitution in the lay press of "smear" for slander or libel; of "outstanding" for famous, distinguished, learned, wise, or able, and so *ad infinitum*.

Any doctor, more particularly any family doctor, who does not come under the influence of this book, is unfortunate indeed; and his patients are more unfortunate.

**THE DIAGNOSIS AND TREATMENT OF ACUTE MEDICAL DISORDERS**, by FRANCIS D. MURPHY, M.D., F.A.C.P., Professor and Head of the Department of Medicine, Marquette University School of Medicine and Clinical Director of the Milwaukee County General Hospital and Emergency Unit, Milwaukee, Wisc. Foreword by GEORGE MORRIS PIERSON, M.D. Illustrated. Second edition. *F. A. Davis Company*, 1914 Cherry Street, Philadelphia. 1946. \$6.50.

The name of this treatise is suggestive of a book that every doctor needs; a perusal of this book will convince any doctor that, in his patient's interest he should have it, and frequently consult its pages.

**THE EGO AND THE MECHANISMS OF DEFENCE**, by ANNA FREUD. Translated from the German by Cecil Barnes. *International Universities Press, Inc.*, 227 West 13th St., New York 11, N. Y. 1946. \$4.00.

So far as this reviewer sees there is no indication of the relationship of Anna to The Freud. Perhaps it is assumed that everybody knows it. This reviewer does not.

Among the striking chapter heads are: The Ego as the Seat of Observation, The Ego's Defensive Operations, Orientation of the Processes of Defense, Denial in Fantasy, Restriction of the Ego, Instinctual Anxiety During Puberty.

The author's contribution to psychoanalytic ego-

psychology is said to have become a classic in the field of theory and therapy.

This reviewer has no opinion on the subject.

## RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M.D., *Editor*, Charleston, S. C.

### THE PREVENTION OF CONDUCTION DEAFNESS

J. G. E. FISHER, Birmingham, in *Jl. Med. Assn. Ala.*, Dec.

THE ARTICLE herewith abstracted<sup>1</sup> is a fair presentation of the case for Crowe and his co-workers have for many years been doing an excellent job in this field.

Examination of children with an electric nasopharyngoscope prior to surgical removal of adenoids reveals a mass of this tissue which partially or completely obstructs the posterior nares and eustachian tube orifices. During childhood the tissue reacts to infection by increasing in size and spreading to areas of mucous membrane normally free from it. It often happens that even in a very few months after surgical removal of the tonsils and adenoids in children, and occasionally in adults, numerous nodules of lymphoid tissue appear on the walls of the pharynx—a granular pharyngitis. This is not due to inadequate operation; it is impossible to remove all tiny islands of lymphoid tissue.

In over 75% of the children with high tone loss that failed to clear up after operation, Crowe (Hopkins) found an overgrowth of lymphoid tissue nodules in and around the nasopharyngeal orifice of the eustachian tubes.

Children with partial tubal obstruction may have no evident difficulty in hearing at school or at home, or, if they do, it is ascribed to inattention. When untreated, the deafness progresses and becomes evident only when the tones in the speech range are affected. The location of the offending tissue makes practically impossible its surgical removal without further damaging the tubes.

When lymphoid tissue is first exposed to radiation it undergoes enlargement. After one hour the nuclei of the cells begin a disintegration which reaches its height in six hours. This is followed by diminution in the size of the involved tissue, then proliferation of new connective tissue. The whole process requires three weeks. The lymphoid tissue is more susceptible to irradiation than the adjacent epithelium, muscle, glandular structures and bone. Dr. Crowe, with the aid of Dr. Curtis F. Burman, began to treat hypertrophied lymphoid tissue of the nasopharynx with radium, applied through an applicator small enough to pass along the floor of the nose into the nasopharynx. With an electric nasopharyngoscope on one side of the nose and the applicator in the other, it is possible to make the application accurately under visual control.

A two gram minute exposure is given to each side of the nasopharynx, at the orifice of the tube. This small dose of radiation does not totally remove lymphoid tissue, but does reduce its size, and as the patency of the tube is reestablished normal function is restored. Several thousand patients with impaired hearing thus treated by Dr. Crowe have regained normal hearing.

The most common type of middle-ear deafness in adults begins in childhood between the ages of five and 10 years. It progresses so insidiously that it may not become evident until it is too late to correct the primary trouble and restore hearing.

Dr. Crowe is convinced that if school children in the primary grades were examined with an electric nasopharyngoscope at least once a year, and those with hyperplastic lymphoid tissue in and around the orifice of the eustachian tubes were treated with radiation as often as necessary to insure normal functioning of the tubes, the number of deaf adults in the next generation could be reduced 50 per cent.

#### PNEUMONIA PROBLEMS

(M. A. Blankenhorn, in *Cincinnati J. of Med.*, 27:425-440, 1946)

Anyone who thinks that the new drugs have conquered pneumonia may be surprised by his hospital's fatality records. In the Cincinnati General Hospital, between 1940 and 1945, the mortality rate for pneumonia rose from 12 to 17.4%. The increase is largely attributable to greater incidence and severity of type-VII pneumonia. In one period, eight of nine patients with type-VII pneumonia and positive blood cultures died, while only seven of 20 patients with other types of pneumonia and positive blood cultures died. Type-VII pneumonia patients with negative cultures survived.

Occasionally patients who enter the hospital with other diseases acquire pneumonia, indicating that some physicians or nurses are carriers.

Advanced age, associated diseases, and delay in applying for treatment add to the pneumonia death toll.

The four principal causes of pneumonia deaths are respiratory failure, shock, coma, and congestive failure. In respiratory failure, oxygen often fails to relieve cyanosis or anoxia, but adrenalin and aminophylline are used to advantage when acute emphysema or asthmatic bronchiolar spasm occur. Suction aspiration of the trachea and bronchial tree with a long, slender catheter and motor-driven pump aids in supporting respiratory function. Sedation is used cautiously. *Aminophylline is of great value when breathing is slow and pulmonary ventilation is poor.*

The most important factor in development of respiratory failure is the spread of the disease. Sulfonamides and penicillin do not abruptly stop extension or dissemination, even when fever recedes. Antiserum is more effective but has many disadvantages.

*Venesections* may relieve pulmonary congestion when venous pressures are high, and are effective if blood flows freely. Rapid digitalization, by any of several drugs or comparable use of ouabain, benefits patients with auricular fibrillation and engorged veins.

Plasma and whole blood are used for shock, and coramine for coma, with little success. Spinal fluids of patients in coma sometimes reveal the presence of meningitis and hemorrhage.

## BIPEPSONATE



Calcium Phenolsulphonate .....	2 grains
Sodium Phenolsulphonate .....	2 grains
Zinc Phenolsulphonate, N. F. ....	1 grain
Salol, U. S. P. ....	2 grains
Bismuth Subsalicylate, U. S. P. ....	8 grains
Pepsin U. S. P. ....	4 grains

#### Average Dosage

For Children—Half drachm every fifteen minutes for six doses, then every hour until relieved.

For Adults—Double the above dose.

#### How Supplied

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## THE TONIC EFFECTS OF INSULIN IN ACUTE ALCOHOLISM

THE VALUE of the combined use of insulin and glucose in the treatment of delirium tremens and alcoholic hallucinosis Vassaf and Hall regard as well established, the insulin being considered a secondary factor which indirectly speeds the glucose metabolism and thus oxidizes the alcohol more rapidly. The present study includes 29 males and 14 females.

All patients, the insulin-treated group as well as the control group, which did not receive insulin, were placed on a high-calorie, high-vitamin diet, with additional vitamin B<sub>1</sub>, and large quantities of fluids. Chloral hydrate and bromide compound were used as sedatives, as needed, but not more frequently than every four hours, during the day, and pentobarbital sodium or paraldehyde was used at night.

The initial daily allowance of 240 c.c. of whiskey was reduced to a maximum of 120 c.c. by the third day.

The insulin-treated group received 10 units of insulin 20 minutes before each meal and milk or fruit-juice feedings between meals were fortified with four Gm. of cane sugar.

In the insulin-treated group the average duration of the withdrawal period was 1.0 day, compared with 2.2 days for the control group which did not receive insulin. Forty-four per cent of the insulin-treated group received no whisky after admission; 14 per cent of the control group received none.

I. E. G. Vassaf & V. R. Hall, Arlington, Mass., in *New Eng.*

The treated group was more comfortable, the need of sedation was greatly reduced, and some patients required no sedation. The weight gain in the treated group averaged 2.0 pounds during the first week after admission, that of the control group was 0.6 pounds.

Insulin reaction occurred in three cases, appearing within one hour after the injection in two cases and after four hours in the other case. All reactions were mild and readily controlled by the administration of 20 gm. of cane sugar in 250 c.c. of orange juice.

## RHINITIS MEDICAMENTOSA

(C. F. Lake, Rochester, Minn., in *Proc. Staff Meet. Mayo Clinic*, Sept. 18th)

Nasal tampons moistened with 25% solution of argyrol, in our hands has been a successful way of treating the terminal stages of acute rhinitis, subacute sinusitis and, in combination with roentgen therapy, of treating acute sinusitis. During the acute congestive stage of a common cold, hot packs over the face often relieve the congestion and enable the patient to breathe through his nose.

Stimulation of the flow of nasal mucus, which happens when argyrol tampons are applied, is a desirable result. As the patient leans forward and the long strands of mucus drain out, they bring along any mucopus present in the nose and frequently that which is entering the nasal chamber from the sinuses. After the tampons have been removed, gentle suction is applied, which brings forth more mucus and mucopus. One should not use any preparation of silver over long periods, because of the danger of argyria.

## ARM PAIN FROM THORACIC DISEASE

(A. M. Olsen, in *S. Clin. N. Amer.*, 26:801-803, 1946)

Arm pain may be the first or most striking symptom indicating disease of the lungs, esophagus, or diaphragm.

Lesions of the superior pulmonary sulcus may cause a severe shooting pain extending from the supraclavicular region to the fingertips. Atrophy of the hand and arm usually develop later. Primary bronchiogenic carcinoma or metastases will produce identical symptoms. Roentgenograms may show destruction of adjacent ribs or of vertebral bodies.

Spasm of the esophagus, often produced by nervous tension, causes pain in the arms as well as in the epigastrium, back, neck, jaws, and ears. Pain of acute cardiospasm often simulates angina pectoris.

Pain originating in central diaphragmatic lesions is referred along the radial aspect of the arm, cardiac or esophageal pain along the ulnar aspect, but distinction of distribution is difficult. In order of frequency, diaphragmatic sources of arm pain are esophageal hiatal hernia, diaphragmatic pleurisy, and subphrenic irritation.

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JAMES M. NORTHINGTON, M.D., Editor

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## Studies in Chemotherapy of Tuberculosis Culminating in the Use of Streptomycin

JOHN DONNELLY, M.D., Charlotte, North Carolina

**T**O FIND a substance to introduce into the economy of a tuberculous patient and thereby influence favorably the course of tuberculosis has been the objective of countless investigations.

The triumphs of chemotherapy over a variety of nontuberculous infections were sufficiently impressive to justify the anticipation that the curbing of tuberculosis by drugs was within sight, or not very far around the corner.

Feldman,<sup>1</sup> of the Mayo Clinic, reviews a few of the more fruitful bits of work in this field and reports researches of his own, which resulted so encouragingly that I, grown old in practice on the tuberculous, am constrained to welcome it with enthusiasm.

The fact is cited that Rich and Follis in 1938 showed by well conducted experiments on animals, that sulfanilamide is capable of exerting a considerable antagonistic action against experimental infections with the tubercle bacillus. While the sulfonamides proved disappointing as specific therapeutic agents in clinical tuberculosis, the results of their use on infected animals in some instances indicated that the problem should be reexamined. Subsequent extensive investigations revealed that several representatives of a group of compounds known as sulfones were efficacious in suppressing previously established tuberculosis in the highly susceptible guinea pig. The results of the experi-

ments on animals with certain sulfones, particularly with promin, diasone and promizole, seemed to justify the hope that these substances would be equally effective in clinical tuberculosis. These hopes were not realized. All of the sulfones which were studied were found to produce hemotoxic changes of varying degrees, which unfortunate effect sharply limits the amount of these drugs that can be used with safety in the human case.

The next experiment in chemotherapy in tuberculosis concerned itself with the use of streptomycin. Tuberculosis, whether naturally acquired or experimentally induced, differs so greatly from most infections that have responded to chemotherapeutic substances, that it was not very surprising to learn that the tuberculous were not as much benefited as some with other infections. The factors that must be reckoned with in the search for substances capable of inhibiting, arresting or resolving infections produced by the tubercle bacillus are many. The first is the character of the lesions in a disease of long duration, with massive necrosis and formidable zones of peripheral encapsulation. If the infection can be held in check for an adequate period it can be anticipated that resistance will permit reparative processes to become operative and in most instances this response to infection will suffice for its control.

Some evidence has been taken to indicate that tubercle bacilli within the protection of mononu-

1. Wm. H. Feldman, Rochester, Minn., in *Trans. & Studies Col. Phys. of Phila.*, Dec.

clear phagocytes are more difficult of access to extraneous agents than are those living extracellularly or those within epithelioid cells. The peculiar chemical constitution of the t. b. has frequently been considered a formidable obstacle to successful chemotherapy in tuberculosis. In Feldman's opinion this factor has been emphasized in excess of its importance. The limitations he regards as mostly those imposed by the tolerance of the animal for the substance used. The list of agents that will kill or inactivate t. b. *in vivo* is large, but the toxicity of the vast majority for healthy tissue is so great as to preclude their use therapeutically.

Due emphasis is placed on the importance of the virulence of the strain of t. b. used to inoculate experimental animals. A satisfactory strain is one that when injected subcutaneously into guinea pigs, in medium to small doses, produces typical progressive, disseminated and invariably fatal tuberculosis. Treatment must be delayed until the infection has become well established. Any drug that shows promising activity against tuberculosis induced by a given strain of t. b. should be tested also against infections produced by several, preferably recently isolated, strains of both human and bovine types.

The application of chemotherapy has been complicated by the fact that many disease-producing microorganisms, after exposure to a therapeutic agent lose their original sensitivity to the drug, even become highly resistant. Whether or not t. b. exposed *in vivo* to the sulfones acquire drug-fastness is not known. It is known that under certain conditions t. b. that are highly resistant to streptomycin may be developed.

There has been established during the past few years sufficient evidence to indicate it is not unlikely that in the reasonably near future the clinician will have the choice of several drugs having a high specificity for tuberculous infections.

The existence of substances of microbial origin capable of antibacterial effects was recorded nearly 70 years ago by Pasteur and Joubert, who noted that certain air-borne bacteria inhibited the growth of anthrax bacillus and wrote, "These facts justify the highest hopes for therapeutics."

Hinshaw's and Feldman's interest in streptomycin dates from April, 1944, a few weeks after the announcement of its discovery by Schatz, Bugie and Waksman, when Waksman placed at Feldman's disposal a quantity of crude streptomycin sufficient to treat four tuberculous guinea pigs for a brief period. The results obtained were so impressive that with the cooperation of Merck & Co., Inc., of Rahway, New Jersey, it was possible to carry out a well-controlled series of experiments between July, 1944, and January, 1945.

Studies on the use of streptomycin *in vivo* were limited to tubercle bacilli of the human and the bovine types.

For the second experiment streptomycin was available to treat 20 guinea pigs each inoculated subcutaneously with 0.1 mg. of tubercle bacilli. Ten of the animals were not treated and served as controls. As one animal in the treated group and one in the untreated group died prematurely, the final results were based on a total of 18 animals. Streptomycin was administered every six hours. Because of toxic impurities in the streptomycin used during the early phase of this experiment, it was necessary to vary the dosage. A more refined product was obtained and in the latter phase of the experiment each animal received a daily dose of 6 mg. of the drug, continued for 61 days. The disease processes found in the untreated controls were widely disseminated and in most instances destructive. In the treated animals signs of the disease were absent or barely detectable. There were no significant differences in the effects of therapy in the group that was treated starting on the day of infection and in the group in which the beginning of treatment was delayed.

Additional studies demonstrated that, although the activities of the t. b. had been inhibited, some of the organisms remained viable. In the third experiment 49 guinea pigs were used, and treatment was delayed for seven weeks after the animals had been infected. All animals were inoculated with 0.1 mg. of a strain of t. b. of the human type. All animals exhibited a positive reaction to tuberculin on the 42nd day after infection. Biopsies were done 48 days after infection and treatment was started on the 49th day; 25 animals were treated with streptomycin; 24 were not treated. Each of the 25 treated animals received subcutaneously 6 mg. of streptomycin daily, divided into four equal doses, six hours apart. Treatment was continued for 166 consecutive days. The experiment was terminated 215 days after the animals had been infected.

Although 70 per cent of the controls died during the period of observation, only two (8%) of those that were treated died during this time. Necropsy revealed severe, widely disseminated tuberculosis in nearly all of the untreated controls. Among the animals that had been treated evidence of tuberculosis was either absent or minimal: 52 per cent of the animals that had been treated had no discernible tuberculosis either gross or microscopic. Although all animals were sensitive to tuberculin when treatment was begun, nine (39%) of the animals that had received streptomycin and were living failed to react to tuberculin just before the experiment was concluded. In seven of the nine animals in which a negative reaction to tuberculin was recorded no residual virulent tubercle bacilli could be demonstrated in the spleens by subinoculation of normal guinea pigs.

The organs of predilection for tuberculous lesions

of all the animals were examined microscopically. Of the animals that had received streptomycin, in only one was a tuberculous lesion found in the liver, this a small atrophic nodule. In only one animal was a parenchymal lesion found in the lung, this a solitary calcified nodule. The spleens of 14 of the animals were without microscopic evidence of tuberculosis. Tuberculous changes were recognized in the spleens of 11 animals; however, in seven the lesions were calcified, in three fibrotic, and in one they consisted of epithelioid or hard tubercles. In only two of the treated animals was involvement of an axillary lymph node observed.

The data obtained from this experiment seem to prove that streptomycin was effective in resolving or suppressing established experimental tuberculosis in guinea pigs; that it exerted a suppressive rather than a sterilizing effect on the infective agent. Inasmuch as in more than a third of the treated animals a reversal of a previously demonstrated sensitivity to tuberculin occurred, the results satisfy the prerequisites of an agent worthy of a clinical trial.

To obtain information regarding the ability of streptomycin to combat successfully infections induced by several recently isolated strains of tubercle bacilli, 10 studies were conducted. Evidence that streptomycin had exerted a deterrent effect in each of the 10 groups of animals was manifest. In most instances the disease in the untreated controls had affected the spleen, liver and lungs extensively, and lymph nodes contiguous to the site of inoculation. The initial focus of infection in the tissues at the site of inoculation had persisted and progressed. Open ulceration commonly was present. The absence of both gross and microscopic lesions of tuberculosis in 54 per cent of the 72 animals that had received streptomycin for two weeks or longer was impressive. The tuberculosis in the remaining 46 per cent of the treated animals was for the most part minimal.

From the results of the fifth experiment it was concluded that in the treatment of tuberculous guinea pigs with streptomycin frequent administration of the drug is not essential. In future work with animals giving the drug twice daily at 12-hour intervals is contemplated.

The most convincing evidence observed regarding the sensitivity of the human type of tubercle bacilli to streptomycin *in vivo* and the high specificity of this antibiotic agent for these microorganisms is found in an experiment not yet terminated.

Twenty-four guinea pigs were inoculated intravenously with 1 mg. (moist weight) of laboratory stock strain of tubercle bacilli; 12 of the animals were not treated and all of these died of generalized tuberculosis in an average period of 19 days. Of the remaining 12, streptomycin was given to six,

beginning the day infected, stopping 60 days later. Except for one animal that died on the second day the animals in this group continued well until some time after treatment was discontinued. Eventually the remaining five animals died, the days between infection and death, 84, 86, 170, and two lived for 193 days. Of the five, in three the disease was severe and widely disseminated; in the other two gross signs of tuberculosis were not observed. The average survival time for the five animals treated for 60 days was 147 days compared to the average survival time of 19 days for the untreated controls.

Treatment of the animals in the second group was started four days after inoculation with t. b., was continuous for 225 days, at which time all of the animals in the group, except one, were living and are still living at the time of writing, 240 days after the animals had been inoculated. The one animal that died had severe tuberculosis in the lungs, no gross lesions in the liver or spleen. On several occasions during the course of the experiments the treated animals were tested for sensitivity to tuberculin. All tests gave positive results.

This experiment, while not yet completed, has demonstrated dramatically the potency of the suppressive action of streptomycin on tubercle bacilli of the human type under extremely formidable conditions. The dose of infective inoculum was excessively large; in addition, the bacteria were introduced by the method (intravenous administration) most likely to produce a rapidly fulminating infection.

This rather extensive experience with streptomycin leads these investigators to believe that this antibiotic in its purified state has a very low toxic potential in doses sufficient for therapeutic results. In their third experiment, although each of 23 guinea pigs was treated with 6 mg. of streptomycin daily for 166 consecutive days, no signs were manifested that the drug was poorly tolerated. The animals maintained a normal rate of growth during the period of treatment and gained an average of 250 gm. while receiving the drug. No signs of damage to tissue were found on microscopic examination of the lungs, liver, spleen, kidneys and adrenal glands.

Molitor et al. are quoted as saying there is a considerable difference in the manner in which different species of animals tolerate this drug and expressing the belief that it would be advisable to observe closely the renal and hepatic function of human beings receiving large doses of streptomycin for prolonged periods.

Feldman made further observations, *in vitro*, on 12 strains of t. b. isolated from a like number of patients before and after treatment with streptomycin. These demonstrate that t. b., like various

other bacteria, do acquire an increased resistance to streptomycin. What the significance of this may be in the use of the drug in clinical tuberculosis is uncertain.

In the next experiment two cultures of *t. b.* obtained from the same tuberculous patient were utilized. The *t. b.* in one culture which had been isolated from the gastric contents prior to the beginning of treatment with streptomycin were found to be sensitive to 0.15 micrograms of streptomycin per milliliter of medium. The other culture was obtained from the patient after five months of treatment with streptomycin. More than 2,000 micrograms of streptomycin per milliliter of medium were necessary to exert bacteriostatic action on these bacilli. A group of 28 guinea pigs were inoculated subcutaneously with *t. b.* from each culture, the amount of infective inoculum for each animal being 0.1 mg. (moist weight). The experiment continued for 166 days after infection. The duration of treatment was 146 days.

The last of the untreated controls, inoculated with the *t. b.* sensitive to streptomycin died 114 days after infection. All of the untreated had extensive tuberculosis. Of the 10 inoculated with the sensitive *t. b.* and treated with streptomycin 20 days later, only two died. At necropsy no gross signs of tuberculosis were seen; six of the eight treated animals that survived the duration of the experiment (166 days) were without gross lesions, while two had moderate to extensive tuberculosis.

All of the untreated controls inoculated with the *resistant t. b.* were dead in 164 days of severe tuberculosis. Each of the 10 animals in the treated group had lesions of generalized tuberculosis comparable in severity and extent to that which was found in the untreated controls.

The results of this experiment clearly demonstrate the failure to obtain a therapeutic effect with streptomycin in guinea pigs infected with *t. b.* highly resistant to streptomycin. This result was in marked contrast to the therapeutic efficacy of streptomycin in suppressing a comparable infection induced by *t. b.* from the same source before the patient had received streptomycin.

The clinical significance of the results of this experiment are not entirely evident. The patient from whom the cultures were obtained had responded satisfactorily to streptomycin therapy. Although the *t. b.* obtained from the patient at the end of the period of treatment were highly resistant to streptomycin, the disease apparently became stabilized and there has been no reactivation eight months after streptomycin therapy was stopped. Specimens of gastric lavage obtained four, five, and six months, respectively, after streptomycin therapy was discontinued failed to produce tuberculosis in guinea pigs.

About all that Feldman feels justified in con-

cluding from this seventh experiment is that in the guinea pig streptomycin is not therapeutically effective if the tuberculous disease is induced by a highly resistant strain of *t. b.*; and he says the ultimate evaluation of streptomycin in clinical tuberculosis will be difficult and long delayed.

Hinshaw, of the Mayo Clinic, Feldman further reports, has treated with streptomycin 100 tuberculous patients in the past two years. The disease in each case was showing unmistakable signs of progression. Within a few weeks after the beginning of treatment the tuberculous process in a majority of the cases was sufficiently altered to cause at least its temporary arrest.

In some types, especially tuberculous draining sinuses, a tendency for the disease process to become reactivated when treatment was discontinued was shown. On the resumption of treatment, the disease again responded favorably. In recent months the clinical results have been even better, which may be due to the fact that the streptomycin used has been more refined and the larger amount provided has permitted treatment for longer periods. The usefulness of streptomycin in clinical tuberculosis is apparently dependent on a continuation of the suppressive action of the drug for a long period.

Feldman has been encouraged by the results of his investigations to say that no longer must infections by the *t. b.* be considered as beyond the effective range of drug therapy. Whether the agent of choice eventually proves to be a synthetic substance or a substance of microbial origin, he regards as problematic.

Sound advice is offered that until more potent substances are available for chemotherapy in tuberculosis those concerned with the control of this disease should not neglect the application of the known and tried effective means of attacking the problem. Early diagnosis by mass surveys, segregation of contagious patients and adequate care and treatment in a sanatorium remain the indispensable features of an effective program of tuberculosis control. A highly effective chemotherapeutic agent to supplement such a program would provide reason for the belief that eventually tuberculosis might become a rare disease.

After carefully reading Feldman's full report, one with a long and large experience of tuberculosis, and of the futility of previous attempts at drug therapy, may well think that this investigator errs on the side of conservatism in summing up and concluding.

I dare hope that streptomycin, or some nearly related substance, will prove so curative as to so supplement the means now at our command for combating tuberculosis, that within a few decades tuberculosis will be rare disease among the people called civilized.

# The Pupil in Differential Diagnosis

C. B. FOSTER, M.D., Charlotte, North Carolina

IN THE clinical routine of an ophthalmic examination, the study of the pupil is interesting and productive of information. Such a study may be done in the space of a few minutes and with the aid of the instruments ordinarily found in the office.

The reactions of chief clinical importance are:

1. The light reflex
2. The near reflex
3. The reaction to emotional states (psycho-sensory reaction)
4. The reaction from irritation of the fifth cranial nerve (oculo-pupillary reflex).

The latter two are of less importance than the first two and noted whenever the sensory fifth nerve is irritated, as in corneal foreign bodies, and iritis. This occurs so frequently that whenever an inflamed eye is seen with a wide pupil, other factors such as edema, increased intra-ocular pressure, or an intra-ocular lesion, should be suspected.

Some individuals naturally have a smaller pupillary diameter than others. The former are said to have a dominant parasympathetic (pupillary constrictor) element in their autonomic nervous system. The latter are referred to as those with a more highly responsive sympathetic (pupillary-dilator) chain. However, in the same individual, under stress of fear and anxiety, the pupil dilates beyond its usual state. The psycho-sensory reflex can frequently be a guide to an underlying emotional problem.

The two reflexes noted comparatively in examination are the near reflex, and the light reflex.

The reaction to nearness is a narrowing of the pupillary diameter, brought about by a stimulation of the constrictor muscle fibers by the motor third nerve. This reaction, or reflex, is a part of the act of focusing upon a near object. The effect is in relation to the accommodation and convergence expended, and is equally manifested in the two eyes. The stimulus is a blurred image on the retina. The afferent path is the optic tract to the occipital cortex, where the reflex is arced to the mid brain, returning efferently to the eye by way of the third nerve and ciliary body.

When the near reflex is present, and the light reflex is absent, we have the pupillary phenomenon described by Argyll Robertson. This has been found to indicate tumor of the corpora quadrigemina and epidemic encephalitis, as well as syphilis of the central nervous system.

In evaluating the quality and quantity of the

light reflex it is helpful to make a practice of estimating the pupillary diameter. By constantly checking one's estimates with a millimeter rule, this can become well fixed in mind.

Duke Elder states that the normal pupillary diameter lies between 2.5 millimeters and 4.0 millimeters.

It has been shown that the visual discriminative acuity (minimal difference in light intensity observed) and the motor discriminative acuity (reaction of pupil to smallest difference in light intensity) are the same. So, in a normal individual, a good deal of information about the visual acuity can be gathered from the pupillary light reaction. It has also been shown that, within certain limits, the stimulus to the pupil is not the degree of illumination, but the variation in illumination, when the eye is adapted for a given amount of light.

The pupil reacts to darkness in a characteristic manner as it does to light, although in a reverse direction, and in a less forceful manner.

One of the most interesting studies on pupillography is that of Lowenstein and Friedman found in the *Archives of Ophthalmology*, Vol. 27 (1942). Here is shown the pattern of light response. It consists of a lag of from 0.2 seconds to 0.28 seconds after application of the stimulus followed by a forceful contraction lasting from 0.5 seconds to 0.7 seconds, and a slowly rising curve of dilatation, until at the end of 2.7 seconds the original diameter is nearly attained.

Much confusion can be introduced here by the finding of a hippus (play of the pupil). Evidently in normal individuals this phenomenon varies a good bit, but does not alter the basic pattern of light response described. The curve may be ragged from hippus but the phases are still there to be observed.

The double innervation of the pupillary musculature should here be recalled. The parasympathetic, by way of the third cranial nerve, brings about the constriction, and the sympathetic via the superior cervical ganglion, cavernous plexus, fifth nerve, and long ciliary nerves, the dilatation.

When the constrictor phase of the pupillary reaction to light is weakened or abolished, involvement of the third nerve mechanism is indicated, and the possibility of a luetic infection should be borne in mind.

The reaction may be studied in the office by having the patient seated in a light just strong

enough to equally illuminate the corneae for accurate observation, and by having him fixate an object at least ten feet away. An ordinary pocket flashlight or ophthalmoscope is then brought in from the side so as to stimulate one eye at a time, and is held in place during the full cycle of movements.

Anisocoria may be due to injury of the iris musculature, monocular pathology, anisometropia, and intracranial lesions. A luetic infection may be present, as noted above, when the anisocoria becomes greater during the contraction phase, when one pupil lags behind its fellow on application of a light. To determine this, have the patient fixate on a distant object as before, but direct the light so that it falls on each pupil equally. If no factors are found to explain the difference in pupillary size, and if the anisocoria is concomitant (unchanging under light stimulus), the phenomenon may be physiological as occurs in from 2% (Bondi) to 40% (Scheer).

It may be said that the oculist's interest in visual pathway lesions is in direct relation to the proximity of the lesion to the eyeball. That is, the problem is his own when the eyeball or optic nerve is involved, is his cooperatively with the neurosurgeon in chiasmatic and prechiasmatic lesions, and is almost entirely a neurosurgical problem (except for diagnostic aids) from the optic tracts and primary centers on.

In using pupillary reactions as an aid in localization, the pathway of the nerve fibers concerned in the contraction phase should be recalled. These fibers run afferently undistinguished from the visual fibers through optic nerve, chiasm, and optic tracts. In the posterior two thirds of the tracts the pupillary fibers part company with the visual elements, the latter continuing on to the external geniculate bodies, while the pupillary fibers pass through each brachium anterius to the superior colliculus of the mid brain. Here new intercalated neurons begin, the fibers of which decussate on their way to the Edinger Westphal nucleus. From there, they travel via the third nerve and ciliary ganglion, and short ciliary nerves to the pupillary muscles.

By way of the crossing of the intercalated neurons, connection between the two eyes is provided and the explanation of the consensual or opposite side pupillary reflex is seen. When this phenomenon is present, it must be concluded that the portion to the reflex arc passing through the mid brain is intact.

A good example is seen in examining a person who is blind in one eye from optic nerve injury. The pupil is dilated; there is no direct light reflex, and stimulation of the blind eye brings no response in its fellow; however, stimulus of the sound eye causes not only a direct reflex there, but also one in the pupil of the blind eye.

To avoid unnecessary confusion, the findings can be considered in relation to the site of the lesion.

1. From the retina up to the external geniculate body the visual loss as shown by chart and perimeter and the pupillary reflex loss are in relation. This is so because both sets of fibers (visual and pupillary) take origin from the same retinal end organs and travel closely together for that distance. The statement holds true even for optic tract lesions resulting in hemianopsia. If the blind halves of the retinae are illuminated no pupillary reaction occurs, whereas light on the seeing halves of the retinae produces the usual response. Special apparatus is needed for accurate demonstration of this phenomenon (Wernicke's hemianopic fixation). However, with the head of the ophthalmoscope removed, and by using the pinpoint cap and exercising care, the reaction can be shown in the office.

2. When interruption of the visual fibers occurs at and beyond the external geniculate body, there is no relation between vision and pupillary reflex. The lesion occurring after the pupillary fibers have left the optic tract leaves a light reflex in a non-seeing eye.

3. Lesions of the intercalated fibers, in mid-brain and before they arrive at the third nerve nucleus, produce the Argyll Robertson pupil, already described.

4. When an equal diminution in the light and near reflex occurs, the disturbance is termed total fixation or paralysis of the pupil. The condition is brought about by a lesion in the immediate neighborhood of the Edinger-Westphal nucleus.

5. Coming back toward the eye we find lesions below the Edinger-Westphal nucleus, that is, of the third nerve and ciliary ganglion, producing a total pupillary fixation, plus accommodative paralysis. This condition is termed ophthalmoplegia interna. It affects the light and near reflexes, and also accommodation, because the nerve fibers serving all three functions are traveling the same road below the third nerve nucleus.

Atropine, by paralyzing the sphincter and ciliary muscle fibers, is the classic example of a locally acting drug producing the same result.

To complete the clinical picture, it may be noted that constriction of the pupil is produced by narcotics through stimulation of the sphincter, and by the miotic group of drugs through stimulation of the third nerve endings.

Sympathetic stimulation by drugs acting locally upon the nerve endings is seen in the mydriasis following application of adrenalin and cocaine solutions.

And lastly, paralysis of the cervical sympathetic chain evidences itself as a miosis, and failure of the second or dilatation phase of the light reflex pattern. When accompanied by a slight ptosis of the upper lid and enophthalmus, the phenomenon is termed Horner's syndrome.



# Progress in Endocrinology

J. F. NASH, M.D., St. Pauls, North Carolina

**T**HE PROGRESS made in recent years in various branches of endocrinology has been phenomenal, and so vast as to make it difficult for the practitioner to keep up with it. The discovery of the antithyroid action of thiourea derivatives, the synthesis of several natural corticoid hormones, the isolation of various anterior pituitary hormones are a few of the most important to the practitioner of medicine.

Dr. Hans Selye, of the University of Montreal, has been particularly interested in developing knowledge of endocrinology as bearing on the concept of "the diseases of adaptation," which term he applies to those maladies which result from an abnormal or excessively prolonged adaptive reaction to the stress and strain of life. This subject this research worker has just presented<sup>1</sup> on the basis of personal experience which lays foundation for various new pharmacological approaches to the therapy of the major cardiovascular syndromes of internal medicine.

My attention has been attracted to this report so strongly, by reason of its implications of causing tremendous improvement of our control of conditions so little manageable, as to cause me to come out in the front of the journal, with an article in no way original.

Selye and his associates investigated the influence of high-carbohydrate diets upon diseases of adaptation. Such a study seemed all the more important, since, with the ever increasing complexity and pressure of civilized life, the diseases of adaptation become increasingly more prevalent. Some go so far as to say that in most cases, these maladies are the price we pay for success in our struggle for advancement. Others question this causation, and go further to say that stress and strain was much greater in what we are prone to think of as "the good old days."

The most essential difference between living and dead matter is the great adaptability of living matter to various changes in its surroundings. In order to make life possible, nature has provided living matter with a number of complex adaptive mechanisms, which are essential to its continuing life. Excessive or abnormal adaptation, however, may and does often defeat its own purpose. As has been established as fact for a century, fever is a useful adaptive reaction, since an increase in the

body temperature provides an environment inimical to various bacterial invaders. Excessive fever, however, may in itself cause death.

The most important diseases of adaptation are listed as:

- 1) High blood pressure with hardening of the blood vessels. This may lead to heart diseases, coronary thromboses, kidney diseases and brain hemorrhages.
- 2) Stomach ulcers, with hemorrhage, perforation and peritonitis.
- 3) The so-called rheumatic diseases, with muscle, joint and fibrous tissue changes of every grade of severity, all the way to total disability.

The present investigations began as a result of an accidental discovery in connection with Dr. Selye's medical research, under the Canadian National Research Council. During the war, it was observed in England that inhabitants of heavily bombed cities (London, Bristol, Liverpool) suffered from an extraordinarily high incidence of stomach ulcers at the time of heavy air raids. After numerous futile efforts to learn the cause of these ulcers, it became possible first to produce similar stomach ulcers in animals by mental stress and then, to prevent these by diets rich in sugar.

Subsequently, it was found that a number of the diseases of adaptation are actually the result of an excessive (defensive) overwork of the adrenals, producing huge amounts of adrenal hormones during exposure to any type of stress, as elaborated by Cannon many years ago. This response is indispensable, since it permits survival, in spite of such stresses which would otherwise kill. An excessive amount of these adrenal hormones, repeatedly induced, is in itself damaging, however, as it produces hardening of the blood vessels, increase in blood pressure, kidney and heart disease as well as certain rheumatism-like changes.

Recently, Professor Selye and his co-workers succeeded in reproducing all these human diseases in experimental animals by the administration of adrenal hormones.

An attempt was made to apply these deductions to the problem by exposing animals to conditions analogous to those under which these diseases of adaptation had developed in excessive numbers, and carefully recording the results. Having succeeded in producing disease in these experimental animals, the workers proceeded with efforts to prevent or cure such experimentally produced diseases.

1. Hans Selye, M.D., Ph.D., D.Sc., F.R.S.(C), Professor and Director of the Institute of Experimental Medicine and Surgery, University of Montreal, Can. Presented at the Midyear Meeting of the American Pharmaceutical Manufacturers' Association (in connection with the Eighth Annual Scientific Award Ceremony, honoring the Mayo Foundation) at the Waldorf Astoria Hotel, New York City, December 9th, 1946.

Observations of the usefulness of high-carbohydrate diets in preventing the so-called "air-raïd ulcers" served as a first clue. After many fruitless experiments on several thousand animals, it was found that diets rich in carbohydrates, but poor in salt, also inhibit high blood pressure, hardening of the blood vessels, kidney disease, etc., whether produced by stress and strain or by direct injection of the adrenal hormones into experimental animals. It would therefore appear that diets made up mostly of sugars rather than meats and salt would be most effective in preventing the occurrence of the diseases of adaptation in man.

A new pharmacological approach to the therapy of the diseases of adaptation was devised a few years ago, when ammonium chloride was found to counteract the damaging effect of toxic doses of adrenal hormones without interfering with their beneficial resistance-increasing effect. It appears that ammonium chloride helps to rid the body of excess sodium.

Dr. Seyle and his associates entertain strong hopes for the future application of this research. Preliminary observations on patients suggest that the facts established concerning the diseases of adaptation in animals are also applicable to man. They realize that much more work will have to be carried out on this problem—rather on these many problems—before the full benefit of these observations can be made available to the patient. They are convinced, however, that suitable food selection will be able to do a great deal to prolong the average life span of mankind.

The great practical importance of the implications of the results of these researches commands the attention of all doctors. The death rate from heart disease has practically doubled in the United States between 1900 and 1937, while that from most other diseases diminished with the progress of medical science. Heart and blood vessel diseases are the most frequent cause of death in man, taking off a half-million each year in the United States alone.

Some of the observations of these investigators corroborate the experience of Dr. Walter Kumpner with the treatment of high blood pressure states with a diet consisting largely of rice.

If the research men will provide the practitioners with an effective means of dealing with cardiovascular-renal diseases, all that is called rheumatism, arthritis, or fibrositis, and peptic ulcers, we can wait patiently for a better way of combatting the few important problems of practice that will remain.

## RECENT ADVANCES IN IMMUNIZATION PROCEDURES

(R. P. Schowalter, Milwaukee, in *Wisc. Med. J.*, Dec.)

Smallpox vaccinations should be given at five to nine months. Revaccination should be done at six years of age. Multiple pressure is the method of choice.

There is no natural immunity to chickenpox and we have no method of producing a lasting immunity except by having the disease. It is usually mild if had in childhood and severe if had in adult life. In an exposed child whose resistance is low, 30 c.c. of pooled human serum soon after the exposure may reduce the virulence of the infection.

We develop no long-term immunity against measles except through an attack of the disease. Measles should be considered a serious illness, and more so for adults. If convalescent measles serum or gamma immune globulin is given directly after exposure, the disease can be prevented. It might be preferred to give the serum a little later and in smaller dosage, allowing the patient to develop a mild case that will give him a lasting immunity. The immune globulin available commercially for a number of years as a placental by-product often caused febrile reactions.

Active immunization against whooping cough, diphtheria, and tetanus should be started at six months of age. Triple vaccines now used for this purpose are well tolerated.

Human hyperimmune pertussis serum gives temporary protection to infants who have been exposed to whooping cough and have not yet had their routine immunizing. If infants under six months of age contract the disease, the use of this serum may be a life-saving measure.

Gamma globulin (human) is a safe and effective means of preventing or modifying an attack of measles. Large quantities of this product have been made available to the civilian population by the Red Cross without charge.

A new and milder product for scarlet fever immunization is tannic acid-precipitated scarlet fever toxin.

## EPITHELIOMA

(Joseph A. Elliott, M.D., and David G. Welton, M.D., Charlotte, N. C., in *Archives of Dermatology and Syphilology*, April, 1946)

The high incidence of epithelioma in the white population of the Southern States supports the concept of an etiologic relationship between solar radiation and skin cancer. An analysis of the clinical observations and the results obtained in the treatment of 1,742 patients with epithelioma of skin are presented. The combined use of curettage, electrothermic destruction and roentgen ray therapy resulted in 97.1% cures in 1,052 patients followed for five years or longer. This has proved to be an ideal therapeutic procedure for the average epithelioma.

## TOXIC SULFONAMIDE COLITIS

(H. Gauss & L. J. Weinstein, Denver, in *J. Dig. Dis.*, Dec.)

Three cases of toxic sulfonamide colitis are reported following the oral administration of sulfathiazole in one instance and sulfapyridine in two instances. Although seen under different circumstances, the three patients presented singularly similar clinical pictures of the digestive tract complication. In all of them the colon was swollen and hemorrhagic to the full length of the 25-cm. scope. The patients all had very frequent hemorrhagic stools with severe abdominal cramps.

With the withdrawal of the sulfonamides, the symptoms subsided, and the colon returned to its normal appearance; leading to the conclusion that the hemorrhagic colitis was the direct result of the toxic effect of the ingested sulfonamide.

# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### CRIMINAL OR SYPHILITIC?

CRUEL though the ancient Romans often were, both in war and in peace, they probably looked upon an assault upon the character of the dead as an exhibition of poor sportsmanship. For the dead can attempt to defend themselves neither through flight nor by attack. Before one speaks in condemnation of the dead one should intone once or more times the admonition of the ancient Romans: *de mortuis nil nisi bonum*. A brave man does not attack one who is defenseless.

Had I not read in the press in recent weeks repeated references to the condition that had incapacitated Al Capone for the past few years I should not be speaking now of his last illness as paresis.

That disintegrative condition of the central nervous system evolves usually out of chronic syphilitic infection. If Al Capone were syphilitic when he died in Florida a few days ago, one must wonder how long he had been syphilitic, and how long the infection had existed before the condition were diagnosed and what treatment were given and with what obvious effect.

I believe Capone was finally convicted in the United States Court of repeated failure to pay his Federal taxes in full, and on that account he was imprisoned. But many of the American people and much of the press had probably thought of him as guilty of homicides and of many other crimes. When I would read from time to time in days gone by of other gangsters being assassinated by Capone's henchmen, I would wonder if the mind directing such slaughter could be normal. Even though it seemed to be impossible to obtain evidence that would convict Capone in court of any crime, his behaviour could have been looked upon as sufficiently abnormal as to justify his being brought before a Lunacy Commission upon a warrant for psychiatric investigation. A Wassermann test of the blood serum and of the cerebro-spinal fluid would have constituted a part of the diagnostic survey. The discovery in Capone several years ago of chronic syphilis of the central nervous system might have afforded an explanation of his antisocial behaviour; and with vigorous treatment he might have been restored to health. I am writing only speculatively about him. I know nothing of his life history. Sometimes it is difficult to decide whether the syphilitic infection constitutes the

basic cause of the aberrant behaviour and the criminal conduct or whether a degree of delinquency reaching back almost to childhood afforded the reason for the early contraction of syphilis.

But no person should be allowed to continue to behave criminally for many years as Capone was said to have done. He could have been brought in for medical examination and he could have been legally detained in safety while the study was being carried out. One may wonder if the authorities in Chicago lacked the stomach to deal with Al Capone in such fashion.

The syphilitic parasite is often an important factor in human behaviour and especially in criminal conduct. The parasite is patiently persistent in unceasingly writhing and wriggling itself through the human cellular structure, with resultant microscopic physical disintegration and consequent malignant effect upon the individual's mentality, character and morals. Is the unrecognized parietic ignorant of his own condition, conscious of his morbid life, or responsible for it? I can scarcely think of any other medical condition quite so dehumanizing in its influence upon behaviour as well established paresis. Which was the more inconsiderate—Al Capone of society, or medicine and the law of Al Capone? Who will make answer?

## PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

### CONCERNING CERTAIN CONTAGIOUS DISEASES

THE January issue of the *Journal-Lancet*, Minneapolis, is a Special Public Health Number. In that issue is much of great value, which is herewith passed on to our readers.

Most of us need to have firmly fixed in our minds the facts to follow<sup>1</sup> concerning

#### TUBERCULOSIS

In 1912 it was believed that the individual who did not develop primary tuberculosis (tuberculous infection) during childhood had no immunity when adulthood was attained, after which infection would result in highly fatal forms of the disease. However, observation proved that adults who become infected for the first time tolerate the primary type of tuberculosis in the same manner as children, and subsequently they are no more likely to have chronic reinfection type of disease than those who were infected as children.

Some other related facts so established were:  
1) The tuberculin test is the most delicate and accurate phase of the examination for tuberculosis. Tuberculin reactions closely coincide with carefully performed postmortem examinations but with no other phase of the examination of the living

body. This reaction indicates the presence of primary tuberculous lesions containing living tubercle bacilli with well known but unimportant exceptions. Therefore, there is no dividing line between tuberculous infection and disease.

2) Children under the age of 14 years, even though they react to tuberculin, so rarely develop the chronic reinfection type of pulmonary tuberculosis in contagious form that it is not necessary to make x-ray inspections of their chests.

3) Nearly all contagious pulmonary tuberculosis occurs in adulthood. Therefore, contagious cases must be sought among adults.

4) X-ray inspection of the chests of adult tuberculin reactors often reveals evidence of gross reinfection type of lesions long before symptoms are present or signs can be elicited by examination. Every adult tuberculin reactor, regardless of apparent good health, should have periodic x-ray film inspections of the chest. If and when a shadow appears the examination should be completed to determine whether it is due to a tuberculous process.

5) The primary type of tuberculosis (tuberculous infection), whether it occurs in the child or the adult, is not benefited by the present forms of treatment such as sanatorium care. However, all such children should be protected against exogenous reinfection and should be examined at least annually after they attain adulthood. Active reinfection type of tuberculosis, wherever it occurs in the body, should be carefully observed or treated at once.

1. J. A. Myers, Minneapolis.

#### EPIDEMIOLOGY OF POLIOMYELITIS<sup>2</sup>

Opinions regarding the epidemiology of poliomyelitis differ radically. The evidence is not sufficiently clear to permit the formulation of even so much as a theory; at best it warrants nothing better than a hypothesis.

Multiple cases within a family are of common occurrence, rather than a rarity as was formerly believed. It has become increasingly evident that contact is a factor of major importance in the spread of the disease.

The hypothesis most commonly accepted is that of respiratory tract transmission.

2. G. W. Anderson, Minneapolis.

#### IMMUNIZATION AGAINST PERTUSSIS<sup>3</sup>

Administration of pertussis vaccine to young children has resulted in reduction of this most serious communicable disease of early childhood to such an extent that pertussis is no longer a problem in Evanston. Because of the high pertussis death rate in infants, it is recommended that protection against the disease be carried out with an alum-precipitated preparation before or simultaneously with immunization against diphtheria between the ages of four and six months. Vaccina-

tion against smallpox can follow these, preferably at one year of age. Active immunization against tetanus is to be employed in communities where tetanus is apt to occur, particularly in agricultural areas.

Physicians will find it most convenient to administer pertussis vaccine during the routine monthly office visits of infants in the early months of life. All injections of pertussis vaccine should be made into the deep subcutaneous tissue over large muscle masses in the arms or buttocks. To reduce the possibility of cyst formation to a minimum, 0.1 c.c. of air injected simultaneously with the antigen and light massage over the site of injection are recommended, taking care that injection be not repeated in sites previously used.

A booster dose of pertussis vaccine should be administered to previously immunized children just prior to entering school, and also when exposed to pertussis. Employment of a mixture of pertussis vaccine and diphtheria toxoid for this purpose is a valuable procedure, increasing diphtheria immunity at the same time. The pertussis agglutigen skin test for susceptibility to pertussis is a reliable test, which should be employed in all future immunization programs.

3. W. H. Tucker, Evanston, Ill.

#### THE CONTROL OF INFLUENZA BY IMMUNIZATION<sup>4</sup>

The efficacy of vaccination against influenza can be enhanced manifold by vaccination groups of individuals in constant association. By virtue of the protection afforded each individual there is the additional protection resulting from the reduced likelihood of exposure to an infected person.

Information available indicates the advisability of reimmunization in the fall of each year in which a high risk of exposure is anticipated.

4. J. E. Salk, Ann Arbor, Mich.

#### STATUS OF TROPICAL AND EXOTIC DISEASES AMONG SERVICEMEN<sup>5</sup>

Tropical and exotic diseases in military personnel returned to the United States neither constitute a hazard to the public health nor are expected to show themselves in sufficient numbers to cause many serious and difficult diagnostic and therapeutic problems.

Credit for this favorable situation is due in considerable part to the often overlooked fact that during the war field sanitation and hygienic practices reached levels unprecedented in military campaigns, and to the fact that our medical officers possessed the ability efficiently to diagnose and treat these diseases in the areas in which they were endemic.

5. D. R. Mathieson, Rochester.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### THE PLACE OF PHYSICAL MEDICINE IN GENERAL PRACTICE

POPULARITY of physical therapy ebbs and flows. We are now at a period of flood. There can be little doubt that most of us neglect to get for our patients the good possible from this form of treatment.

Zeiter's article<sup>1</sup> appeals because it says the man doing general practice is competent to do most of his own heating, rubbing and manipulating.

The substance of this helpful article follows.

In rheumatic diseases the triad of heat, massage, and exercise is of great benefit. The application of heat may be by the use of hot water, whirlpool bath, infra-red radiation, paraffin, or diathermy.

In chronic rheumatoid arthritis, general exposure to heat may be used on patients who are fairly robust, but only with caution on weak or emaciated patients. The ordinary bathtub may be so utilized—the t. of water 98 to 105°, elevated gradually during the bath. Body temperature is elevated often 2 to 3°, general metabolism is increased, and sweating induced. Begin with short intervals and the lower t. to determine tolerance.

Infra-red radiation is used extensively in the treatment of the rheumatic patient. A simple body baker is also effective. This consists of a cradle large enough to accommodate the entire body in which are suspended a number of electric light bulbs. After application for 10 to 30 min. the baker is covered with several layers of blankets to prevent heat loss.

The full wet pack frequently is very beneficial at home or in the therapy department.

The whirlpool bath with water at 110 to 115° for 30 min. dilates peripheral blood vessels by heat and the whirling water has the effect of gentle massage and tends to relieve pain and relax muscles in the immersed extremity.

Hot paraffin is a clean and effective agent for raising the t. of localized regions of the body, especially of the hands and feet. It is to be applied for 15 to 30 min., two to three times weekly or in severe cases daily. Ordinary commercial paraffin, with a melting point from 123 to 136° is heated in a double boiler. Most patients tolerate a t. of 126°. A high melting point can be readily lowered by addition of liquid paraffin or mineral oil. To prevent burns the patient should have an initial treatment in the physical therapy department or be given printed instructions.

Infra-red or luminous heat lamps are very effective for local heating of body tissues at a distance

from which it feels comfortable; time of exposure 15 to 45 min. For application of luminous heat to the extremities, the U-shaped baker is suitable.

No specific physiologic effects other than heating are obtained from diathermy.

Massage usually follows heat in the arthritic patient. Light stroking produces a sense of well-being; heavier pressure a dilatation of vessels with increased blood flow. Massage prevents or delays muscular atrophy and helps the restoration of tissue when atrophy has taken place. It may be used to improve local and general metabolism, to increase circulating blood, and to relieve pain of myositis.

Massage of an arthritic joint is usually directed to the muscles above and below the joint. As inflammation of the joint subsides, light stroking massage may be applied to the affected part. One may instruct a member of the patient's family in the technic to be carried out at home.

Exercise increases the flow of blood through muscles 20 or more times. Passive exercise may be used under proper supervision of a skilled therapist. Active exercise by the patient should be practiced as soon as possible through a normal range of motion, using slow movements through the fullest possible range of motion.

Periarthritis of the cervical spine is not an uncommon condition, as manifested by pain, stiffness and soreness in the supporting ligaments and muscles of the neck. Frequently there is associated numbness and aching in the arms and hands with soreness of the shoulder muscles.

Apply local heat to cervical spine by infra-red radiation or short wave diathermy, massage, stretching and progressive exercises. For manual stretching: the patient seated on a hair, the therapist places one hand under the jaw and one over the occiput and then exerts a lifting pressure. The head is then rotated to the right and to the left through its fullest range. In the subacute or chronic stage stretching can be obtained by means of the Sayre headsling or similar apparatus.

Periarthritis of the shoulder frequently can be relieved and motion restored by the use of local heat followed by massage and exercise. In the severe case manipulation under anesthesia followed by traction may be necessary. The shoulder is put through its various motions to the fullest extent possible.

Diathermy is an aid in the relief of pain, tenderness, and muscle spasm and in the promotion of the absorption of the calcareous deposit in bursitis. Luminous heat or ice bags may be more beneficial, followed by massage and graduated exercise.

Fibrositis involving the lower area of the back is frequently encountered. Heavy stroking and kneading massage, applied directly over the induration,

1. W. J. Zeiter, Cleveland, in *Ohio State Med. J.*, Jan.

and infra-red radiation are in order. The condition may become aggravated from the first few treatments.

In hemiplegia faulty position of the joints with subsequent contractures is prevented by simple splinting and frequent changes in position. Passive movements should be performed early accompanied by radiant heat and gentle stroking massage. As soon as some muscular power has returned, the patient should be instructed to reëducate the antagonistic movements at the joints, thus counteracting the tendency to contracture.

Physical therapy is needed in most cases of fracture: heat through infra-red irradiation, whirlpool baths, hot packs or heat cradle; massage, light, in the direction of venous return; muscle stimulation effected by muscle "setting" while the part is in the cast, voluntary motion or electrical stimulation; and exercises including occupational therapy to develop the use of the impaired part.

Local applications of cold, with rest, proper compression bandaging, and elevation are indicated for immediate treatment. Later, splints or bandages should be removed and replaced after daily heat treatment with the whirlpool bath or infra-red generator. The heat treatment is followed by massage.

Occupational therapy is to be planned and carried out from the viewpoint of functional, diversional and prevocational value.

## DERMATOLOGY

J. LAMAR CALLAWAY, M.D., *Editor*, Durham, N. C.

### A TREATMENT FOR SEBACEOUS CYSTS

SEBACEOUS CYSTS (wens, steatomata) occur chiefly on the scalp, face, behind the ears, over the back and on the scrotum. They usually present as fluctuant, tense swellings usually one to two centimeters in diameter but may be larger, and are attached to the normal skin over them. The surface of the overlying skin is smooth and shiny as a result of stretching of the skin with pressure atrophy. The cyst is attached to the overlying skin by the remains of the expanded duct which may be seen plugged by a comedone. The soft, somewhat vile-smelling material filling the cyst is formed of epithelial cells and sebaceous material. Frequently the sebaceous cyst becomes infected which makes it more adherent to surrounding tissue and much more difficult to enucleate.

Although sebaceous cysts rarely undergo malignant degeneration, they are frequently unsightly and depending upon their location may also be detrimental to the appearance of the individual, or may cause loss of hair due to pressure atrophy.

Sebaceous cysts must be differentiated from dermoid cysts, fibromas and lipomas.

Treatment in general is by surgical excision with care being taken to remove the sacs completely. Unfortunately, however, the cyst frequently recurs, and it is not unusual for a cyst to have to be removed two or three times surgically. A variety of other treatment procedures have been used, including electrodesiccation.

During the past year twelve patients have been treated in the Dermatology Department of Duke Hospital by a simple treatment regimen which has been entirely satisfactory in the twelve patients so treated. This treatment has been simple and yet satisfactory and will be described.

1. The cyst is painted with iodine, cleaned with alcohol, and using a stylet or small surgical blade, an incision is made directly into the sebaceous cyst through the duct opening.

2. All of the fatty sebaceous material is completely evacuated by pressure.

3. The evacuated cyst is then filled with tincture of iodine. The iodine solution is left in and a small dressing is applied.

4. The patient is observed two or three days later, and, if necessary, the cyst is again evacuated and refilled with iodine.

In from three to four weeks the cyst becomes completely fibrosed, appears flat, with the cell lining of the cyst apparently destroyed by the action of the iodine.

### THE PROBLEM OF DOUBTFUL SEROLOGIC TESTS FOR SYPHILIS

WITH the introduction of newer and more sensitive serologic tests for syphilis, the problem of doubtful or conflicting serologic tests for syphilis becomes more acute.

The first consideration is that of a technical error in the laboratory. This can be checked by repeated examinations in the same laboratory.

The next consideration is that of conditions which may produce biologic false-positive reactions, such as infectious mononucleosis, malaria, vaccinia, serum reactions, etc. To evaluate such problems a definite program must be followed to exclude all possibilities of error.

- I. A careful history and physical examination is imperative. Particular attention should be paid to mucous membranes and genitalia with dark-field examination of suspicious lesions.

- II. Repeated serologic test for syphilis in the same laboratory with *quantitative* analysis. Without quantitative serologic tests for syphilis no satisfactory interpretation can be made since a positive may indicate four or four thousand units.

- III. Repeated serologic tests in a separate laboratory.

- IV. Complete blood studies (white blood cell count, differential studies, smears for malaria, Paul's test, etc.)

V. Verification test (Neurath test or other similar verification test).

VI. Family and contact epidemiological survey with serologic test for syphilis on each.

VII. Spinal fluid examination (cell count, quantitative total proteins, spinal fluid Wassermann, and colloidal mastic test).

VIII. Fluoroscopic examination of cardiovascular system.

IX. Continued quantitative serologic tests for syphilis to determine if the titer is going up or down.

Such a painstaking and time-consuming program as has been described is often necessary to establish the presence or absence of a syphilitic infection. Should syphilis be present it must, of course, be treated. But, on the other hand, a patient should not be stigmatized with a diagnosis of syphilis on the testimony of a false positive test. Therefore, in the absence of clinical syphilis, doubtful or conflicting serologic tests should be thoroughly investigated.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### THERAPEUTIC USE OF CONCENTRATED PROTEINS

In the past few years protein deficiency has gained recognition as an important medical problem and great strides have been made in solving the problem.

Leger<sup>1</sup> has published an article carrying all the essentials, which article is herewith freely abstracted.

Proteins are essential to the life of all tissues. Man must eat protein foods to replenish the daily wear and tear. The amounts of protein adequate in grams per kilogram of body weight are: normal adult, 1 gm.; infant, 3-4; growing child, 2-3; pregnancy, 1.5-2; lactation, 2.

Proteins are complex organic molecules, consisting of amino acids linked together. Digestion breaks the protein down through the peptone, proteose, and polypeptide stages to amino acids. They are thus absorbed and transported by the portal circulation to the liver. There a portion of the amino acids is changed into serum proteins, and the remainder, not needed for this purpose, is deaminated and converted into carbohydrate to be used as fuel, or excreted as urea.

Plasma proteins are the carriers of food, hormones, and immune bodies; they help in the production of blood elements; they maintain acid-base balance of the blood, and they serve to replenish tissue protein.

Plasma proteins are of two types: the albumins

and the globulins. The globulin fractions are fibrinogen and alpha, beta and gamma globulins. Each of these globulins has a specific physiological function; e.g., antibodies in gamma globulin and prothrombin in beta globulin.

Plasma proteins are largely manufactures in the liver, especially albumin and fibrinogen. Albumin is regenerated at the rate of 25 grams per day, a rate not adequate if large amounts of body proteins are being lost. Elman *et al.* suggest that a reduction of albumin from 4.0 to 3.5 gram per 100 c.c. of plasma, in a 150-lb. man, would represent a loss from the body of 510 gram of albumin. Severe depletion of body protein may require a long period of protein therapy to correct the deficit, and the plasma protein concentration may return to normal long before the body deficit is made up.

There are no clinical signs until the deficit is pronounced, and even then the chief sign is edema, which may be the result of other factors. Main reliance in diagnosis must be placed on a nutritional history. The diet may be deficient in certain of the amino acids which the body requires, and yet be adequate in quantity. It must also contain adequate carbohydrate and fat to prevent the conversion of body proteins to carbohydrates for use as fuel.

Plasma protein level is our best index of depletion of the reserve stores of protein. Plasma albumin is first reduced because it has five times the osmotic effect of globulin, and is regenerated more slowly. Interpretation of plasma protein levels is often difficult unless the plasma volume is known. A negative nitrogen balance exists when excretion of N is greater than the amount consumed. Protein loss from any cause should make one suspect protein deficiency.

Food by mouth is the most effective means of administration of protein. The patient will seldom take more than 100 gram of a high protein diet per day if he lacks appetite and/or has a gastrointestinal disturbance; this is seldom adequate if the deficiency is marked. The high-protein diet should always be supplemented with vitamins.

Parenteral proteins—life-saving at times—must be given in very large amounts to be effective in restoring nitrogen balance. They are of four main types:

Human plasma is an excellent source of protein, but as one unit furnishes only 12 to 15 grams, many units are required.

Paralbumin and amigen are quite satisfactory, provided they are given slowly, and the liver is capable of deaminating them so that they can be utilized.

Crystalline amino acids should be ideal; however, the expense and availability of such preparations make their use almost prohibitive at the present time.

<sup>1</sup> E. L. H. Leger, Kansas City, in *Jl. Kansas Med. Soc.*, Jan.

Protein digests or hydrolysates of casein and yeast are excellent for supplementary feedings, if the patient will take them. Much of the unsavory taste can be overcome by incorporating them into breads, cake, sandwich spreads, desserts, jello, hot cereals, bouillon, soups and milk. Three or four feedings of 25 to 35 gram each can be given per day. The many such preparations on the market vary considerably in percentage of protein and in taste.

The commonest cause of protein deficiency is inadequate diet. At least eight of the 22 amino acids are necessary and since these cannot be synthesized by the body, they must be taken in the diet. Digestion and absorption are impaired in diseases of the stomach, intestine, pancreas and liver.

Manufacture of plasma proteins and body proteins depends upon an adequate intake of proteins, as well as a proper functioning liver capable of the synthesis of plasma proteins.

Body stores of protein are depleted by febrile disease, increased metabolism, and chronic exudative processes; also protein is lost through nephrotic syndrome, ascites, hemorrhage, burns, etc., are common causes of protein deficiency.

Specific indications for high-protein intake:

Kidney diseases, losing large amounts of protein in the urine. When uremia, hypertension and heart failure complicate the picture, the protein need is less.

Liver disease: Protein is of more value than carbohydrate in protecting liver ills. Patients with cirrhosis of the liver and hepatitis may not willingly ingest high-protein diets. The acutely ill hepatitis patient may require parenteral fluids and plasma.

Gastrointestinal malfunctions are the chief causes of protein deficiency; peptic ulcer, chronic pancreatic disease, enteritis, ulcerative colitis, diarrhea, and draining fistula are almost invariably associated with lowered proteins.

Excellent results were obtained in the treatment of peptic ulcer patients given 5 gm. of amigen and 5 gm. of dextri maltose per kilogram (2.2 lb.) of body weight daily in 8 or 9 two-hourly feedings. No antacid or antispasmodics were used.

Following trauma, severe infections or operations, convalescence can be greatly shortened if protein deficiencies are made up.

In poorly controlled diabetes large protein deficit may occur; protein 1.5 gram per kilogram of body weight is needed for a few weeks, after which one gram should prove ample.

Thyrotoxicosis causes great increase in metabolism; loss of protein is largely responsible for the muscle weakness. A high-protein, high-calorie diet is indicated in conjunction with anti-thyroid drugs, or surgical treatment.

Spontaneous hypoglycemia is quite frequent, especially in the neurasthenic fatigue patient. A diet high in protein and low in carbohydrate, with no free sugar is of great benefit.

Anemia, exudative skin disease, hypoproteinemia (dietary), anorexia nervosa, pregnancy, and lactation are all causes of protein deficiency, and all demand a high-protein diet.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### NOT EVERY PATIENT WITH URINARY SYMPTOMS OR SIGNS SHOULD HAVE "COMPLETE UROLOGIC STUDY"

THE FINDING OF PUS CELLS in the urine demands a comprehensive roentgenologic renal visualization, estimation of each kidney's functional capacity and mobility, and the determination of the presence or absence of renal infection.

The paragraph you have just read is quoted from an article by a distinguished practitioner and teacher of urology. Apparently it reflects the thought of most urologists in the large cities, particularly those in teaching positions whose patients are either in the class to which expense is no object, or who are being treated at no expense to the patient.

I demur to the statement that in every case in which pus cells are to be found in the urine such exhaustive examination as is outlined should be done.

The essayist quoted goes on to present an excellent discussion of what may cause urinary infections, and how.

In hematogenous invasion of the kidneys the origin of the bacteriemia may be from furuncles, carbuncles, infected teeth, tonsils, sinuses, gallbladder, prostate gland, or miscellaneous infection anywhere in the intestinal tract or in the male or female genital organs.

The three most frequent sources of bacteriemia of renal significance arise from: 1) coccal skin infections with the formation of the renal cortical abscess and the renal carbuncle with subsequent perinephritic abscess development; or if there is a massive bacterial attack, the whole organ becomes studded with small abscesses; 2) intestinal tract lesions, in which case the bacteriemia is of colon bacillus origin; or 3) coccal or bacillus coli infection of the male urethra and prostate gland.

In pyelitis the infection has either come from above, in which case the renal parenchyma may be involved, or if from below, it may involve the renal pelvis first and secondarily the parenchyma, going on to a pyelonephritis. Uncomplicated pyelitis is infrequently found. There is dilatation of the renal pelvis and the condition is an infected hydronephrosis.



In the discussion of this essay, another eminent urologist takes more conservative ground.

The cystoscope, x-ray, renal function and bacteriologic tests have brought about exactness, both as to diagnosis and treatment, and in the sulfa drugs we have at our command a powerful chemotherapeutic agent that is safe in the hands of most general doctors in the treatment of uncomplicated urinary infections. The guidance of good excretory urography in many instances shows the physician what case he may safely treat. Good pictures show satisfactory anatomical delineation and simple tests establish renal function. Catheterized urine in the female and voided specimens in the male can be easily examined routinely and a stained urinary sediment which can be made by anyone reveals pus and bacteria. Cases that demonstrate poor renal function, abnormal urograms, and ones that do not yield to the properly selected sulfonamides should be referred to the specialist.

It is well to keep in mind the possibility of renal tuberculosis in chronic pyurias, especially where there is marked frequency due to a sensitive intolerant bladder. Another reminder is not to confuse the terminal hematuria often present in infection with the silent hematuria of urinary neoplasm. The sulfa drugs have brought us a long way from yesterday's hexamethylenamine therapy and renal pelvic lavage as our mainstay in treating pyelitis or pyelonephritis. The doses need not be large and improvement is rapid in most cases. A large intake of fluids, plus sodium bicarbonate, is indicated; with sulfonamide therapy and frequent examination of the urine for red cells, crystals and urinary volume output. Untoward symptoms, if any, usually occur in the first few days, giving ample time to discontinue the drug. After the urine is free of pus and bacteria, careful follow-up should be instituted. This treatment is also largely applicable to renal infections of childhood, pregnancy and old age.

The Editor of this Department believes it to be entirely impracticable, and unwarranted from the standpoint of expense, to subject every patient showing a few pus cells in the urine to elaborate urologic examination. In the first place, when we find a very few of what we would call pus cells if they were many, we call them white blood cells. In a great proportion of cases even real pyuria will clear up promptly, and the patient *feel and be well* after taking a few doses of a sulfa drug. Except in cases in which graver symptoms and signs are shown, reasonable consideration for those who have to bear the expense demands that we proceed for a time less expensively, reserving the complete examination described for cases which do not respond favorably.

## SURGERY

JOHN W. DEVINE, JR., M.D., *Editor*, Lynchburg, Va.

### ANTISEPTICS, OLD AND NEW PENICILLIN

ALL OF US use penicillin. All of us marvel at its wonder-working. Most of us will be glad of an opportunity to read penicillin's discoverer's modest account of this marvelous achievement; and his comments on antiseptics and antiseptis.

It is well to have an account from the individual who has done most recently with antiseptic treatment.

An antiseptic is anything which prevents the growth of bacteria; most chemicals will stop bacteria growing if you use them strong enough. A very powerful antiseptic that we keep in the body—all of us—and which people are apt to forget is our body cells. We have lots of cells which can pick up bacteria, digest them and destroy them. It is by means of these, probably, that we get rid of most of our infections. Most cells are greedy, and they can pick up more than they can digest. If cells ingest too many microbes, the microbes destroy the cells, not the cells the microbes.

In my young days we dressed septic wounds every day and put on carbolic acid, mercuric chloride or iodine; next day we did it again, eventually the wound got well. One of the most popular methods of antiseptic treatment in World War I was the Carrel-Dakin method. Dakin's fluid was put into the wound every two hours. I found that the potency of Dakin's fluid disappeared within 10 minutes in a wound so that, for one hour and 50 minutes out of every two hours, there was no antiseptic in the wound. That may have been fortunate; in any case it was a successful method of "antiseptic" treatment. Dakin's fluid was really a poor antiseptic, but if Dakin's fluid is applied to a wound the amount of exudation from the walls of that wound increases just as it does with hypertonic salt solution, also a successful application to septic wounds. Most people paid no attention to that.

Then chemical antiseptics may affect the natural defenses. This can be estimated by use of the "slide cell," which I am pleased to see is used in this institution. Into a narrow cell you run in blood, plus 50 staphylococci, along with a little salt solution. You get two or three staphylococcal colonies; the blood kills the rest. Blood is a good killer of microbes so long as the leukocytes are intact. Then, as you put in carbolic acid, beginning with a weak solution and making it gradually stronger, more and more staphylococci appear. At a dilution of 1 in 640 of carbolic acid, all the staphylococci grow. The antiseptic, then, has made

1. Sir Alexander Fleming, London, in *Proc. Staff Meet., Mayo Clinic*, Feb. 20th.

the blood a first-class culture medium—by killing polynuclear leukocytes, in a concentration at which it won't injure bacteria. By this method I found that carbofic acid and all the other common antiseptics used in former days killed leukocytes more easily than they killed the microbes.

Later on, we came on another naturally-occurring antiseptic which is found in all our bodies which has a remarkable lytic action on certain bacteria. In working with this antibiotic substance, lysozyme, found especially strongly in human tears and hen's egg white, we took a thick suspension of the right bacteria and added the smallest quantity of tears or egg white and kept the mixture warm for 30 seconds. In that short time it became perfectly clear. I have never seen such rapid bacteriolysis. I punched little "cups" in an agar plate which had been inoculated with the test microbes. Lysozyme-containing material was placed in the agar cups so made and after 24 hours was an area of inhibition around the cups depending on the potency of the lysozyme. But the microbes most strongly inhibited were those not pathogenic to man, so lysozyme has not taken an important place in therapeutics.

Now we come to penicillin. I have been accused of inventing penicillin, but a mold called *Penicillium* has been making it for thousands of years. There are several hundred varieties. If a *Penicillium* spore is placed on a culture medium for six hours at room temperature, it germinates and sends out processes which elongate and branch until a thick felt has grown on the surface, such as you have seen on bread, cheese and other substances. The mold sends up special reproductive processes which divide and subdivide and then bud off spores from the terminal branches. These spores blow about in the air and those which find a suitable habitat grow—very few; otherwise we should indeed be moldy.

One of these spores dropped on a certain culture plate of mine covered with staphylococcal colonies. I had often seen such contamination before, but what I had never seen before was staphylococci undergoing lysis around the contaminating colony. This was far more interesting to me than the staphylococcal research, so I promptly subcultured that mold and got it in pure culture.

Spores on it and, after four or five days, streaked certain microbes across the plate radially to the mold colony. Some of them grew right up to the mold; others would not grow anywhere near it. Here the ones which were inhibited were pathogenic. Here was a mold that did something which might be useful.

The next thing to do was to grow it in a fluid medium, broth, and see whether the antibacterial substances would appear in the fluid. The mold grows as a felted mass on the surface of the broth, leaving the fluid clear. I found that dilutions of

1:1,000 still inhibited the staphylococcus. This substance was christened penicillin.

Now, all these effects of penicillin relate only to the inhibition of growth of the microbes, but this substance does more; it kills the microbes as well and induces a lytic action. In the laboratory we tried the different microbes to see which were sensitive and which weren't.

The next thing to do was to test its toxicity on cells. Penicillin was the first substance we ever found that had a more powerful effect on bacteria than on the cells.

The older antiseptics showed little power of diffusion, whereas penicillin is extremely diffusible.

We tried a little in clinical work, but not much. However, penicillin is very unstable. As likely as not by that time the potency of the penicillin had faded away. We tried to concentrate penicillin but we were bacteriologists, not chemists, and we failed.

A year or so afterward, Raistrick, in another institution, got our culture and, using a much simpler medium than we had used, made penicillin. He was a chemist and he partially succeeded in concentrating it. But there were no chemical tests for the potency of the concentrates—only bacteriological ones and I understand that the bacteriologists in the institution did not fully cooperate so he published his results and went on to other work. Then the subject rested for 7 or 8 years until Florey, Chain and their co-workers at Oxford got our cultures; and used Raistrick's medium to begin with and nearly the same method of extraction; but the changes they introduced made all the difference. They concentrated it a thousand times and then dried it; it was only when it was dry that it was stable. As soon as water is mixed with penicillin powder it ceases to be stable. They then tried penicillin on different bacteria, on cells, on mice. The control mice all died but the mice they injected with penicillin didn't. They asked for cases to try it on and they were presented with people who were three parts dead, who had been given everything else. Even with that unsuitable material, their first list of cases showed that penicillin was remarkable stuff. After that suitable cases were available. Florey came over here and got people interested. The result is that there is an enormous amount of penicillin being made here and you are supplying us and many other people with it.

It is easy to test whether microbes are sensitive to penicillin, and very desirable, before treatment with penicillin is instituted. With penicillin you will cure most of the pneumonia patients. Pneumonia is generally a pneumococcal infection; it may be a streptococcal infection or a staphylococcal infection. But it may be due to Pfeiffer's bacillus or Friedlander's bacillus, in which case you

won't cure it. It is not the disease you are combating with penicillin; it is the microbe.

You have to get penicillin in contact with the microbe—in some way so that it gets into the blood and circulates; or if the infected tissue is accessible, you can apply penicillin locally. Then you have to maintain an effective concentration for a sufficient length of time.

If intravenous injection of 15,000 units of penicillin is made, the concentration is at its maximum and will disappear before three hours. After an intramuscular injection the concentration does not go so high; then gradually it diminishes and in three hours it has disappeared. If you give the substance by continuous drip into the vein or muscle concentration depends entirely on the rate at which you give it. You can maintain a constant level only by giving the material by the continuous drip method. If you give injections every three hours, the concentration in the blood goes up and down. Which is the best method has yet to be proved; it is easy to argue both ways.

We had less penicillin than you had and often we had to use it locally when we would have preferred to inject it and to get at the infection through the blood. But some of that local treatment was very successful. A pleural cavity infected with a sensitive microbe can be sterilized by local injection of penicillin once a day for two or three days. After that the physician must treat the patient. Some penicillin can get into the spinal fluid of a patient who is suffering from meningitis when reasonable doses are injected by the usual routes. You can always inject penicillin directly into the spinal cavity. Using both methods, there have been some remarkable results from use of penicillin in cases of meningitis attributable to various infections. We don't want to trust that enough penicillin will get into serous cavities after just injecting it into the muscles, but supplement it by injection into the joints, the pleural cavity, the peritoneal cavity and sometimes in other places.

If you use penicillin against sensitive microbes, and if you use it carefully enough to get the penicillin at the microbe, you will get good results.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### REPORT OF THE 1946 MEETING OF THE AMERICAN COLLEGE OF SURGEONS

THE FORTY-NINTH ANNUAL MEETING of the American College of Surgeons, held in Cleveland, December 16th-20th, was unusually well attended in spite of its nearness to the Christmas holidays and to Canada. No meeting had been held since 1940 when it was held in Chicago.

The South, as a whole, was well represented. However, many of the older men who have been regular in their attendance were conspicuously absent. This was due, perhaps, to the eagerness of the younger men to appear on the program, and the older men giving way to the younger men in their groups. Also, the older men hesitated to go without accommodations being obtainable at or near the headquarters hotel. However, practically all of the proceedings aside from the hospital clinics were held in the city auditorium, and many of the hotels were as close, if not closer, than the Statler, our headquarters.

Many of the newer treatments practiced in the Army were discussed by the younger men and they did a very fine job of presenting their subjects. A note of radicalism was sounded all through the program. Ligating the deep femoral vein to prevent pulmonary embolism after a serious operation was much talked about. This seems somewhat comparable to amputating a man's finger so that he will not stick a pin in it and have blood-poisoning. It is true that there are many veins that could take the place of the deep femoral or deep pelvic veins, but it is no more true than that there are nine other fingers to take the place of the one amputated.

Cancer, especially the deep x-ray therapy, was discussed at length. No mention was made of x-ray sickness following these heroic treatments, nor did they mention what the autopsy showed to be the actual cause of death of those who came to autopsy.

Thiouracil in hyperthyroidism was discussed in length. Dr. Frank Lahey's group in Boston emphasized the fact that our old true and tried remedy, Lugol's solution, is still to be used along with thiouracil, but in smaller doses.

A meeting of the Hospital Administrators, including nurses, dietitians, historians, etc., was held in conjunction with the annual meeting of the College. Northwestern University is taking a leading part in training hospital administrators. Our own Duke University is doing a great work along this line. However, Northwestern has sounded a note of common sense far in advance of some other educational institutions. They take the position that if a man has had experience in the office of a hospital administrator, or as assistant to the superintendent, this experience should be counted something on his college entrance requirements. This has made it possible for a great number of superintendents and hospital administrators to fulfill their ambitions of getting a college degree in hospital administration without having to first spend four years in college as an entrance requirement, as is now the rule at Duke and some other institutions, I am told. To one who has had consider-

able experience in operating hospitals and in running training schools, it appears that some of our higher institutions of learning have placed entrance requirements for many of the professions too high. I trust that the Northwestern University will set an example for many of the other universities.

Much was said about the dilemma that the nursing profession now finds itself in. Various opinions were expressed by the present leaders of the nursing profession. The writer was unable to grasp anything of a practical nature as a remedy for the scarcity of nurses; that is if we accept the R.N. degree as representing the rank and file of the nursing profession. Instead of advancing a solution to the problem, they are clamoring for the establishment of another program which would destroy the present status of the R.N., who in the past has been trained to care for the sick people by attending to their needs, both great and small, as well as carrying out the orders of the doctors.

Their proposal is to create a number of schools for training subsidiary nurses. There are sixteen such schools already established in New York City. The course is shorter and admission requirements are less. It is significant that the R.N. still wants to control this subsidiary group. From a practical standpoint, if this succeeds, the number of R.N.'s that would be required to operate a hospital would be so small in proportion to the subsidiary nurses that the wholesale employment of the highly trained R.N. would be discontinued. The public at large would become accustomed to services being rendered by the subsidiary nurses and would soon forget that the R.N. ever belonged to the profession.

It is obvious to those who have thought this question through during the last years that the leaders of the present-day nursing profession have made a bungle of supplying adequate nursing service to the sick public; and yet it is this same group who are now trying to lead, not back to a sane and sound system of furnishing nurses for sick people by the graduate R.N., *but by training an entirely new group!* It might not be a bad idea for some of the workhorses in the nursing profession to get out of the traces and take the lines. It might be entirely possible that this is by far the most desirable leadership that can be found in the profession. It is significant that the administrators of the hospitals were much more inclined to apply common sense principles than the leaders in the nursing profession.

All in all, the meeting was enjoyable and one cannot attend a meeting of the American College of Surgeons without having profound respect and admiration for the devotion and sacrifice made by Dr. McEachern and his staff.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### THE EARLY RECOGNITION OF PERICARDITIS

EXPERIENCE with 16 patients afflicted with acute pericarditis observed by Nathan<sup>1</sup> over a period of 3½ years disclosed that the textbook signs are not always present. Precordial pain occurred in 10, six indistinguishable from the pain of acute coronary thrombosis; in two the pain was tearing, and in the remaining two aggravated by inspiration as in acute pleuritis. Bilateral shoulder and arm pain accompanied precordial pain in four.

Pericardial friction rub was present within the first several hours of illness or after a few days in seven, very evanescent, sometimes lasting only a few hours and varied from slight to marked intensity. Its detection is, therefore, contingent upon examination of the heart at frequent intervals.

In six patients in whom pain or friction rub was not present, the heart sounds diminished considerably within three days and this was attended with a notable widening of the area of cardiac flatness. Flatness to percussion to the right of the sternum is considerably more significant than flatness to the left. When the flat percussion note is elicited as high as the second interspace on the right with an abrupt transition from pulmonary resonance to flatness, pericardial effusion is likely the cause.

In pericarditis with effusion the heart sounds may be intensified, fluid gravitating laterally and posteriorly to the heart, the heart is pushed forward, increasing the area of percussion dullness and allowing for more intensified heart sounds and a prominent diffuse apical impulse.

The most reliable method of detecting this change is by daily roentgen examination of the heart. Sometimes a change in the cardiac configuration is noted on changing the position of the patient from upright to recumbent.

Although pericarditis with effusion is often a benign disease, there are instances in which expeditious diagnosis is life saving. With the advances in antibiotic therapy pericardial suppuration should be little difficult of cure. Despite the success, however, the potential need for drainage by multiple aspirations or surgical intervention cannot and should not be disregarded.

It seems strange that no mention is made of the simple, safe, prompt and effective pericardial aspiration, as a means of diagnosis, and, in most cases, of treatment.

1. D. A. Nathan, Miami Beach, in *Sou. Med. J.*, Feb.

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**FEATURES OF THE MEETING OF THE TRI-  
STATE MEDICAL ASSOCIATION OF THE  
CAROLINAS AND VIRGINIA**

TO BE HELD AT SEDGEFIELD INN, GREENSBORO, N. C.,  
MARCH 3RD-4TH

THE MEETING will be called to order by The Chairman of the Local Committee at 10 a. m. Monday. After brief opening formalities the President of the Association will take the chair and the papers will be called in substantially the order in which they are here set down.

Dr. Ernest L. Copley, Richmond, Va.

"Prognosis in Coronary Thrombosis and Myocardial Infarction"

Dr. J. H. Cherry, Asheville, N. C.

"The Treatment of Compound Fractures in World War II"

Dr. R. S. Crispell, Atlanta

"The Subsequent Course of N. P. Casualties of World War II"

Dr. Charles Troland, Richmond, Va.

"Differential Diagnosis and Treatment of Trigeminal Neuralgia"

Dr. J. W. Bennett, Burlington, N. C.

"Experiences as a Medical Officer Aboard an LST on D-Day in Southern France"

Drs. James Winston Watts, and Walter Freeman, Washington

"Prefrontal Lobotomy for the Treatment of Intolerable Pain"

A Luncheon given by the present officers to all Ex-Presidents is set for the hour from 1:00 to 2:00.

Monday afternoon's session will be featured by Clinics on Bronchitis, Varicose Veins, Diabetes, and a Clinical-Pathological Presentation on Primary Carcinoma of the Heart.

Then papers as follows:

Dr. John W. DeVine, Jr., Lynchburg, Va.

"Subdural Hematomas"

Dr. Wm. deB. MacNider, Chapel Hill, N. C.

"The Good Doctor"

Dr. Fred K. Garvey, Winston-Salem, N. C.

"A Clinical Study of the Use of Streptomycin in Urinary Tract Infections"

Dr. Wm. A. Johns, Richmond, Va.

"Carcinoma of the Rectum"

After the banquet Monday evening the Presidential Address on the subject "Carcinogenic Features of Estrogens" will be delivered by Dr. John Wyatt Davis, Jr., of Lynchburg, Virginia.

Following the President two invited guests will address the meeting:

Dr. Halsey Barker, Baltimore

"The Modern Treatment of Cirrhosis of the Liver"

Dr. Matthew T. Moore, Philadelphia

"Metastatic Malignancy of the Brain and Spinal Cord"

Tuesday, 9:30 a. m., Secretary-Treasurer's Report.

Then papers as follows:

Dr. Kenneth E. Neese, Monroe, N. C.

"Caudal Anesthesia—A Method of Control of Pain and Hemorrhage in Labor"

Dr. T. Neill Barnett, Richmond, Va.

"The Importance of Early Diagnosis and Treatment of Acute Peptic Ulcer"

Dr. Wm. Marvin Scruggs, Charlotte, N. C.

"Use of Thiouracil in Hyperthyroidism"

Dr. S. W. Barefoot, Durham, N. C.

"Occupational Dermatoses in Civilian Practice"

Dr. Paul D. Camp, Richmond, Va.

"Congenital Heart Disease," with Emphasis on the Surgical Treatment

Dr. Wm. H. Prioleau, Charleston, S. C.

"Gaseous Distention of the Abdomen—Prevention and Treatment"

Luncheon 1:00 to 2:00

After luncheon on Tuesday will be held a Fracture Clinic, a Goiter Clinic, and a Clinic on Vertebral Disc Complications.

Dr. Lloyd J. Thompson, Professor of Psychiatry at Bowman Gray School of Medicine, Winston-Salem, N. C.

"Anxiety Reactions"—with Emphasis on Management by the General Practitioner.

Clinical Pathological Conference, by Dr. C. C. Erickson, of the Pathology Department, and Dr. W. M. Nicholson, of the Medical Department, Duke University Medical School.

Several additions will be made to the program, and perhaps some substitutions.

*Any reader noting any errors or omissions will confer a great favor by notifying the Secretary.*

## THE THREAT OF TAKING OVER THE PRACTICE OF MEDICINE AND SURGERY BY HOSPITALS

OVER many years a good many of us have been noting with apprehension the steady taking over of the dominating position in Medicine by the hospitals. One can but wonder how far this movement will go.

Associations to sell hospitalization insurance at low cost on a monthly basis were introduced during the great depression when hospitals were having a hard time finding enough paying patients to keep going. As they were represented to be non-profit organizations these plans were heartily endorsed by the press and various charitable organizations and other civic groups as well as medical societies.

Now, according to an alert medical editor with a reputation for accuracy,<sup>1</sup> 86 hospital service asso-

ciations which meet the standards provided for the Commission on Hospital Service of the American Hospital Association—now known as the Blue Cross Commission—are now in operation in the United States and Canada. The Blue Cross Commission states that 3700 hospitals with 85 per cent of all general hospital beds in these two countries are now Blue Cross member hospitals. These "approved" insurance plans' Standards for Approval say "the interest and the responsibilities of participating hospitals make it necessary that a majority of the policy-making body be hospital trustees, administrators and or representatives of the member hospitals."

That this plan for a greater hospital outpatient service for ambulatory patients has not been changed since 1937 is evident, by a statement of a high hospital official at the 16th Annual Meeting of the Tri-State Hospital Assembly (Ill., Ind., Wisc., Mich.) held last May: "In the overall planning of hospital and allied facilities, it seems inevitable that there will be unprecedented expansion in the care and facilities of the *ambulatory* patient."

Wilmot Read, Past-President of the Washington State Medical Society, sums up this entire matter:

"We are now approaching the day when physicians will be merely a class of skilled workers, readily hired and fired by the community health center. The average practitioner should decide whether it would be worse to have compulsory health insurance providing cash benefits for medical care under government control or medical practice controlled by the Blue Cross and Hospital Corporations, delivered by salaried doctor-employees."

Doctors, individually and by organizations, endorsed the Blue Cross plan in its original form—i.e., as providing hospitalization only. Although it is being represented to the public that they still endorse the Blue Cross plan, a good many medical societies have withdrawn their support because the plan that they endorsed was for hospitalization only, not to provide for the destruction of the private practice of medicine by the taking over of this practice by the hospitals.

If the patient, asks Dr. Swanberg, is to be induced to go to the hospital whenever he is ill, ambulatory or not, physicians may as well close their private offices because private medical practice will eventually be a thing of the past, except in remote regions of the country.

The Blue Cross started out with the declared intention of providing hospitalization insurance only, and at that time was a large factor in filling the hospitals and freeing them from debt. But the soon-ensuing general prosperity has been the chief factor since the first few years since charity patients have largely disappeared, their hospital expenses being paid through some type of hospital assistance.

<sup>1</sup> Harold Swanberg, Editor, *Mississippi Valley Medical Jn.*, in January issue.

It is plain that one out of every six persons in the United States is now insured by the Blue Cross organization, and in an effort to increase this enrollment the Blue Cross is offering an ever-increasing number of medical services in addition to hospitalization. The official publication of the American Hospital Association, which is the sponsor of the Blue Cross, stated editorially in 1937 that "Diagnosis, treatment and care of the ambulatory sick become increasingly the function of the hospital as the hospital develops into the center of community health activities. The patient, whatever his economic status, is entitled to receive the necessary service of the clinician, the surgeon, the pathologist, the radiologist, the nurse and the lay people who attend him. All these services are part of the hospital."

It may be seriously questioned whether it would be preferable to practice medicine and surgery under the provision of the Wagner-Murray-Dingell bill, or under the domination of the hospitals and as employees of the Blue Cross Commission, which is an agent of the American Hospital Association. Fortunately, we do not have to do either. The Wagner *et al.* plan has been effectively scotched. The Blue Cross plan can be as effectively scotched. We have only to withdraw our support from any plan which goes beyond the provision of hospitalization at so much per month, and to see that a majority of the members of the boards of directors of all associations selling hospital insurance are practicing physician or directors, as a prerequisite for the support of their plans by doctors of medicine.

It would be in order, also, to find out just exactly what constitutes a non-profit organization in the present acceptance of the term.

And, I repeat, it would be well to send no patient into a hospital who would be just as well off out of it, and to keep him or her there only so long as meets some good end.

#### ALLERGIC HEADACHE

(I. H. Claybon, Cincinnati, in *Cin. J. of Med.*, Jan.)

The attack of migraine is best treated with gynergen—effective in 80 to 90% of proven migraine; hence, its therapeutic effect is a diagnostic criterion as to whether or not one is dealing with migraine. The usual dose is 0.25 mg. to 0.50 mg. intramuscularly. Administered sublingually the doses must be much higher and are not nearly so effective. The drug is most effective when given in the stage of the prodrome or aura. Gynergen frequently causes vomiting with relief following shortly thereafter. It is not habit-forming, but is contraindicated in cardiovascular disease and pregnancy.

#### A BETTER WAY WITH THE PUBLIC

In the *Ohio State Medical Journal's* January issue, Dr. Jonathan Forman tells us:

"In Colonial days the early laws were for the most part in conformity with that passed by the Massachusetts Bay Colony in 1649. These laws

permitted any one to practice medicine with the consent of the patient; but they denied irregular and unlicensed practitioners standing in civil courts. Hence they could not testify as to medical facts or sue to collect fees. This is the plan in England today. There any one may do anything to a sick person, provided that such a would-be healer has the consent of the sick person and honestly intends to cure him by whatever means he believes to be indicated. In my opinion this has much to recommend it. Certainly the medical profession would be in a much better relation to the public had it never attempted to protect our citizens from the irregulars."

Now, isn't it obvious, once the idea is suggested to you, that the plan of early Massachusetts and of the England of today is far better than our own?

Dr. Forman does not elaborate his thesis. He states it in one forceful sentence: "Certainly the medical profession would be in a much better relation to the public had it never attempted to protect our citizens from the irregulars." He does not say probably, or it is believed; he says certainly.

Evidently the thought of this Columbus internist and medical historian goes along with that of the editor of *Southern Medicine & Surgery*, in that he rejects the I-am-my-brother's-keeper concept.

This concept, as absurd in theory as unworkable in practice, made our position vulnerable to attack from every side; and when the State Boards of Medical Examiners, made up of practitioners of medicine, accepted responsibility for the enforcement of Medical Practice Acts, the failure of effectual enforcement became a certainty along with the deterioration of our relation with the public.

Remember the red-headed boy reading on the grave-stone, "not dead but sleepeth," and his comment: "He ain't kidding nobody but himself; everybody else knows he's dead." That applies to our protestations that we are not thinking of our dignities or our profits, but only of the good of the public.

Then, think of the certainty that this attempt to protect our people from the irregulars has worked injury to our people and ourselves; and be working toward the adoption of the sensible plan of early Massachusetts and present-day England.

#### APPRECIATION OF DR. COOPER

For nearly 40 years Dr. George M. Cooper has devoted his fine abilities to Public Health work in North Carolina. All the various phases of this great work he has covered, and all the various roles of the drama he has filled in a way highly creditable to himself, and of inestimable benefit to the people of North Carolina.

Indeed, his services have not been limited to

those of his own State, for many of his innovations have proved so wise as to attract the favorable attention of Public Health officials of other States, and of the Nation, and been adopted by them, to the improvement of health and prevention of disease far and wide.

For more than a decade Dr. Cooper has been Assistant State Health Officer and Director of the Division of Health Education, Crippled Children's Work, and Maternal and Child Health Service.

Toward the close of the last year the North Carolina Public Health Nurses expressed their appreciation of Dr. Cooper's services, and the affectionate regard in which they hold him, by giving him a handsome leather chair.

This does not mean that he is retiring. Every doctor, every citizen of our State hopes for Dr. Cooper many more years of service for our health's good.

#### THE BLOOD SEDIMENTATION TEST AS AN AID TO DIAGNOSIS (C. P. Roberts, Atlanta, in *Jl. Med. Assn. of Ga.*, Jan.)

A qualitative increase in plasma fibrinogen, supplied by the liver, appears to be the chief cause of quickened sedimentation. In health an individual shows the same personal sedimentation rate year-after-year, as much part-and-parcel of him as his electrocardiographic signature. During certain diseases there appears a gradually varying abnormal rate.

The blood sedimentation test is a measure of a phenomenon which is accelerated by inflammatory processes, notably tuberculosis and rheumatism; by tissue destruction, cancer, pregnancy, and to a slight extent menstruation. Clinical experience has indicated that, in a given entity, blood sedimentation rather regularly shows predictable behavior. It may be rapid in the face of minimal physical and laboratory signs; or it may show a surprising normality in spite of a violent and hectic course. Such paradoxical activity has been interpreted as evidence that the test is arbitrary, but these peculiarities are of value in that they may supply a fitting part to the puzzle of diagnosis. Often there is close correlation with pathologic findings. For example, if one follows the progress of cancer by this index, slight elevations of rate may be seen with the primary tumor, values in the moderate-to-considerable range with local extension, and marked quickening at the time of generalized metastasis.

The test is simply carried out in the office or hospital, the desired information being at hand within an hour or less time. Of the various methods, the Westergren technic is most directly informative.

The usual normal rate is less than 10 mm. fall in the first hour.

#### BODY TEMPERATURE AS GUIDE TO DETERMINING THE TIME OF DEATH

(*Jl. A. M. A.*, Jan. 18th)

The onset of rigor mortis or of postmortem lividity is of little use in deciding the time of death. Dr. C. Keith (London) concludes that in estimating the time of death the most reliance is to be placed on the body temperature. It is never too late, he says, to measure this. He cites a murder in which the body T. was still seven degrees F. above the t. of the air, although it had lain 18 hours in the snow. This made it possible to fix the time of death within an hour.

## NEWS

### DUKE UNIVERSITY SCHOOL OF MEDICINE

Dr. Hans Löwenbach, Associate Professor of Neuro-psychiatry, has just returned from a six months' assignment in occupied Germany. During this time Dr. Löwenbach visited, under the sponsorship of F. I. A. T. (Field Intelligence Agency Technical) most of the medical schools in the American, British and French zones of occupation and in Berlin. Dr. Löwenbach's assignment was to gather such manuscripts on medical and related research that had remained unpublished due to the war and after-war conditions. More than 25,000 pages of original manuscripts in all fields of medicine were gathered and microfilmed. This material is on its way to this country to be catalogued and abstracted. The material is available to the public through the Publications Board, Department of Commerce, 16th and K, Washington 25, D. C.

Dr. James G. Whildin was appointed to the staff as Associate in Radiology on January 21st, 1946, after spending five years in the Army.

Dr. R. J. Reeves, Clinical Professor and Chairman of the Department of Radiology, attended the Inter-American Congress of Radiology at Havana the week of November 17th, where he presented a paper on Roentgenography of Unilateral Exophthalmos.

The Technical Division of the Department of Radiology, under the supervision of J. B. Cahoon, Jr., R. T., has increased lectures and demonstrations in order to offer post-graduate instruction to outside technicians who need refresher courses. Two students are admitted for the accredited course in x-ray technical training each March and October. A nursing degree, college diploma, or former technical training is a prerequisite.

Dr. Ivan W. Brown, Jr., attended the International Rh Conference at Baylor University, Dallas, Texas, November 14th-15th and the Seventh International Congress of Surgeons in Mexico City November 16th-23rd, 1946.

Miss Helen Kaiser, Director of Physical Therapy, has recently returned from Greece where she was active in the Near East Foundation. This organization, which has been engaged in Middle East relief since World War I, has established two demonstration rehabilitation centers with the cooperation of U. N. R. A., and the Greek government. These centers are for the care of the maimed of World War II as well as the civilian crippled and disabled. The Foundation has established a Physical Therapy School which has been set up by experienced American personnel, due to the lack of trained Greek personnel. Adequate supervision will be given to the students during their training and first years of work experience. The course has been set up to meet the requirements of the A. M. A. and upon completion of their present course of 12 months, two students will be selected for further study in physical therapy at Duke University.

The Interurban Orthopedic Club held its annual meeting here on November 1st-2nd, 1946. Arrangements were under the direction of Dr. Lenox D. Baker and Dr. R. Beverly Raney.

Dr. Watt W. Eagle addressed the Southern Section of the American Laryngological, Rhinological and Otological Society on January 6th at Miami Beach. His topic was "Elongated Styloid Process—Further Observations and a New Syndrome."

### MORGANTON STAFF ADDITIONS

Dr. Louis G. Beall, Superintendent of the State Hospital at Morganton, announces additions to the medical staff.

Dr. Raymond K. Adams became a member of the staff



last fall. Dr. Adams, a native of North Carolina, was for several years a member of the Staff of the State Hospital at Raleigh and more recently a member of the Staff of New Jersey State Village for Epileptics, at Skillman.

The new physicians of this State hospital are: Dr. William T. Austin, of Memphis; Dr. Walter G. Coker, Jr., of Clinton, South Carolina; Dr. D. Russell Perry, Jr., of Durham; Dr. P. Geisse Mundorf, of York, Pennsylvania. The last three, recent graduates of the Bowman Gray School of Medicine of Wake Forest College, are serving internships.

#### NEW VIRGINIA MEDICAL EXAMINERS

The Governor of Virginia has appointed Dr. Kenneth Dawson Graves of Roanoke and Dr. Chalmers Laughlin Gemmill to membership on the State Board of Medical Examiners. Dr. Graves fills the vacancy caused by the death of Dr. J. W. Preston and Dr. Gemmill succeeds the late Dr. Lewis Holladay.

#### THE AMERICAN MEDICAL ASSOCIATION IN 1876

(*Jl. A. M. A.*, Jan. 18th)

The meeting was held in Philadelphia, welcomed by Dr. William Pepper, who called attention to the fact that Philadelphia had the lowest rate of mortality of any city in the world with over half a million inhabitants.

Dr. Sarah Hackett Stevenson, a delegate from the State of Illinois, was the first woman member of the Association. She was born in Illinois in 1849, graduated from the Women's Medical College of Northwestern University and in 1874 went to Europe for two years' study where she worked with Huxley and Darwin.

The Secretary reported that Boards of Health then existed in Alabama, California, Massachusetts, Michigan, Minnesota, Virginia and Wisconsin—but seven states in all.

MECKLENBURG COUNTY MEDICAL SOCIETY held its regular fortnightly meeting February 4th in the Hotel Charlotte Ball Room. An address on "Arteriovenous Aneurysms, Effects on the Circulation," by Dr. Daniel C. Elkin, Whitehead Professor of Surgery, Emory University, Atlanta, was the feature of the meeting.

#### PATIENT GIVEN A HUNDRED MILLION UNITS OF PENICILLIN

Mrs. Emily Fedrowitz, of Jersey City, has received free 100,500,000 units of penicillin in treatment for acute bacterial endocarditis. At times, she received as much as 9,600,000 units a day. Today she is considered recovered.

Mrs. Fedrowitz, mother of an employee in the control laboratory of the Heyden Chemical Corporation plant at Garfield, N. J., and so received this penicillin free. The Heyden Corporation, which began large-scale production of the drug in 1944, makes free gifts of penicillin to all its employees for whom it is prescribed.

The regular monthly meeting of the PITT COUNTY (N. C.) MEDICAL & DENTAL SOCIETY was held Thursday, January 9th, with Dr. J. M. Newborn, Farmville, President, in the chair.

The program consisted of a paper entitled, Operative Obstetrics, by Dr. W. H. Pott, Surgeon, Pitt General Hospital, and the Annual Report of the Pitt County Health Department, by Dr. N. Thos. Ennett, Pitt County Health Officer.

The meeting was held at the Greenville Airport Inn with Drs. S. M. Crisp and N. Thos Ennett, hosts.

DR. JEROME B. HAMER announces the reopening of his offices at 1521 Elizabeth Avenue, Charlotte, N. C., for the practice of Surgery.

#### DIED

Dr. Joseph A. Abercrombie, for the past ten years surgeon at Mattie Williams Hospital, Richlands, Va., died January 12th from a cerebral hemorrhage.

Dr. Abercrombie, prominent brain and neuro surgeon, was on the staff of Johns Hopkins Hospital for seven years, for two of those years assistant to the chief of neurosurgery.

He had been a member of the Virginia State Board of Health for the past three years.

He was born in Birmingham, Ala., received a bachelor of arts degree from Birmingham Southern and his doctor's degree from Johns Hopkins.

Dr. William D. James, prominent surgeon and founder and director of Hamlet Hospital, Hamlet, N. C., died January 15th. Dr. James had established a wide reputation for his work in the treatment of cancer by the use of x-rays and surgery. He was born at Laurinburg in 1885, and graduated from Jefferson Medical College, Philadelphia, in 1908.

Dr. James A. Grizzard, 65, widely known Southampton County, Va., physician and businessman, died Jan. 28th in Raiford Memorial Hospital, Franklin. He was educated at Randolph-Macon Academy and the University of Maryland Medical School, a member of the American Medical Association, the Virginia State Medical Society, a former president of the Southside Virginia Medical Association and a member of the Southampton County Medical Society, and president of the Southampton County Bank at Courtland.

Dr. L. N. Patrick, a graduate of the University of Maryland in the class of 1909, for 39 years a practitioner in Gastonia, N. C., and city physician since 1935, died at his home February 13th. He suffered a paralytic stroke on the 12th and had been in a coma since.

Dr. William S. Cox, widely-known physician of Tidewater Virginia, died in a Richmond hospital February 11th, after a long illness.

A graduate of Randolph-Macon College, Dr. Cox studied medicine at the Medical College of Virginia. For over 25 years he practiced in the County of King and Queen and later moved to West Point, where he resided for the past 12 years.

Dr. Fanny Messenger Edwards, 87, died January 25th at her home in Richmond. Interment was at Jacksonville, Fla., where her late husband, Rev. Rees W. Edwards, was a ranking officer in the Presbyterian Church. Dr. Edwards was graduated in 1882 from the University of Michigan Medical School, where she was a classmate of Dr. William J. Mayo, with whom she held a lifelong friendship.

Dr. Thomas B. Pearman, Jr., 49, a graduate of the Medical College of Virginia, and prominent as an internist in Richmond, died in a Richmond hospital January 12th.

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## BOOKS

**AN INTEGRATED PRACTICE OF MEDICINE**—A Complete General Practice of Medicine from Differential Diagnosis by Presenting Symptoms to Specific Management of the Patient, by HAROLD THOMAS HYMAN, M.D., Volumes I, II, III, and IV, and Index. 1184 illustrations. 305 in color. 319 Differential Diagnostic Tables. *W. B. Saunders Company*, Philadelphia and London, 1947. \$50 per set.

This work represents an innovation, an extremely important departure from the usual, in medical textbook publication. It is a great achievement in integration of specialized knowledge so as to present the essential features of diagnosis and treatment of practically every condition that may be encountered in medical practice. A just claim is made for the work that it is one of the greatest steps ever taken toward a full and complete information service to the general physician. The 25 sections are grouped under five subdivisions:

Bodily Injuries and Bodily Responses to Injuries

Disturbances of the System of Communication and Coordination

Disturbances of End Organ Systems

Technics of Medical Diagnosis and Therapy

Prognosis.

Each section could well serve as a textbook on a clinical specialty.

The basic sciences are reviewed. The much neglected subject of pathologic physiology is amply covered. In each section methods of diagnosis and treatment are described, or listed with page reference to volume IV. Important differences between private and other practice are illustrated in their bearing on diagnosis and treatment. Availability of complicated and expensive means of investigation is recognized as a problem, and criteria for rational use of these means are presented. The importance of treating the patient rather than the disease or an organ is repeatedly emphasized. Profuse use is made of tables for differential diagnosis.

Intelligent discrimination is used as to the amount of space to be given different disease conditions. Commonly encountered conditions are gone into in great detail; only the high lights are given of rare and unimportant diseases. The closing portion of each presentation is devoted to the "art and science" of therapeutics. The author is fully persuaded that in every case an intelligent program for the relief, prevention or cure of disease is the obligation of the physician, and that in the vast majority of cases such a program is productive of great good. The fields of usefulness of the sulfonamides, of penicillin and of streptomycin are well covered in the text, and there are tables on "The Therapeutics of Penicillin and Streptomycin" and on "Comparative Efficacy of Streptomycin and Sulfonamide."

This reviewer knows of no other work which so readily and accurately provides the information so necessary for the modern practice of general medicine.

**ALLERGY IN THEORY AND PRACTICE**, by ROBERT A. COOKE, M.D., Sc.D., F.A.C.P., Attending Physician and Director of the Department of Allergy, the Roosevelt Hospital, New York City. 572 pages, with 43 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1947. \$8.00.

The review of this volume is approached with pleasurable sensations because it is a book on allergy which is not a ponderous tome. This book is the outcome of a coöperative postgraduate teaching which presents practical instruction given in certain courses sponsored by the American College of Physicians over some years. The substance of these courses has been arranged so as to make a book of great usefulness to the doctor who has patients with allergy, in other words to every kind of doctor.

After going through this book the reviewer is convinced that nothing of practical value was left out in bringing this presentation of the whole subject of allergy within a reasonable compass.

**THE TREATMENT OF BRONCHIAL ASTHMA**, by VINCENT J. DERBES, M.D., Instructor in Medicine and in Preventive Medicine, Tulane University of Louisiana School of Medicine; Director, Department of Allergy, Ochsner Clinic; Fellow, American College of Allergy; and HUGO TRISTRAM ENGELHARDT, M.D., F.A.C.P., Instructor in Clinical Medicine, Baylor University College of Medicine, Houston, Texas; Fellow American College of Allergy; with chapters by a panel of contributors. 61 illustrations. *J. B. Lippincott Company*, East Washington Square, Philadelphia 5, 1946. \$8.

The frequency of the occurrence of bronchial asthma in the practice of the general run of doctors, and the number of cases which are found not very amenable to treatment, make welcome this book by a dozen-and-a-half authorities in this field. The causes are so many as to discourage most practitioners from investigating after the elaborate fashion which is required for a large percentage of cases.

In this book the etiologic and modifying factors, the pathologic physiology and the clinical course, the means of investigation to establish the causative agent, and the various forms of treatment are all amply presented.

**CARDIOVASCULAR DISEASES**, by DAVID SCHERF, M.D., F.A.C.P., Associate Professor of Medicine, New York Medical College, Flower and Fifth Avenue Hospitals; and LINN J. BOVD, M.D., F.A.C.P., Professor of Medicine, New York Medical College, Flower and Fifth Avenue Hospitals. 56 illustrations. *J. B. Lippincott Company*, East Washington Square, Philadelphia 5, 1947. \$10.

The present edition is completely re-written and it represents a change from former editions which

consisted of essays on certain heart disease problems to a detailed discussion of practically all aspects of diseases of the heart and blood vessels commonly met with in practice.

Rheumatic fever is given detailed consideration, as are irradiation of autonomic reflexes and arteriovenous anastomoses. Roentgenologic examination of the circulatory system is described. Electrocardiograms are reproduced, but not in great number. The authors say a detailed discussion of electrocardiography is omitted because this subject requires ample presentation and illustration a separate volume, which the authors have provided as a companion book to the one under review.

Great emphasis is placed on the importance of myocarditis and subacute endocarditis, and the cure of the latter disease by penicillin.

This is an excellent presentation, both as to text and illustration, of the diagnosis, and treatment of cardiovascular diseases today.

**GYNCOLOGICAL AND OBSTETRICAL PATHOLOGY** with Clinical and Endocrine Relations, by EMIL NOVAK, A.B., M.D., D.Sc. (Hon. Dublin), F.A.C.S., Assoc. in Gyn., Johns Hopkins Med. Sch.; Gynecologist, Bon Secours and St. Agnes Hospitals, Baltimore; Fellow, Amer. Gyn. Soc., Amer. Assoc. Obstetricians, Gynecologists and Abdominal Surgeons and Southern Surg. Assoc.; Honorary Fellow, Societe Francaise de Gynecologie; Royal Institute of Med., Budapest; Sociedad d'Obstetricia et Ginecologia de Buenos Aires; Central Assoc. of Obstetricians and Gynecologists; Texas State Assoc. Obst. and Gynec.; Past Chairman, Section on Gyn. and Obs., A. M. A. Second edition, with 542 illustrations, 15 in color. 570 pages. *W. B. Saunders Company*, Philadelphia and London, 1947. \$7.50.

The author believes that the addition of more than a hundred illustrations, many of them in color in this edition, has increased the value at least as much as the size of the book. The endocrinology of the menstrual cycle and pregnancy is well covered in eight pages. Then are taken up in order diseases of the various organs of generation of the female and their pathological changes are related to clinical disease by text and profuse illustration.

To any one already familiar with Novak's writings a recommendation would be superfluous; all others who have to do with gynecological and obstetrical patients are assured that a study of this book will amply reward them.

**SYMPTOMS IN DIAGNOSIS**, by JONATHAN CAMPBELL MEAKINS, M.D., LL.D., Professor of Medicine and Director of the Department of Medicine, McGill University; Formerly Professor of Therapeutics and Clinical Medicine, University of Edinburgh. Illustrated. *The Williams and Wilkins Company*, Mt. Royal & Guilford Aves., Baltimore, 1941. \$3.

The author does not offer this book as a text which will of itself lead any practitioner to an immediate diagnosis. He expresses the hope rather that it will act as a stimulus to the analysis of the symptoms the patient presents, and certainly such

analysis will lead in many cases to a mediate diagnosis. The author shares with Osler and Barker the opinion that symptoms are usually of more importance in the beginning of the investigation of a case than the physical signs or laboratory findings. All of us have had the experience of having puzzled over a case for a long time, and of having felt confident we had arrived at the correct diagnosis, only to be set right by the mere suggestion from some source of the nature of the disease responsible. The presentation is such as to supply quickly just what is necessary for the solution of some of the doctor's most puzzling problems in diagnosis, by supplying the clue which leads immediately to the proper answer.

**THE COMPLETE PEDIATRICIAN: Practical, Diagnostic, Therapeutic and Preventive Pediatrics**, by WILBURT C. DAVISON, M.A., D.Sc., M.D., Professor of Pediatrics, Duke University School of Medicine. Fifth edition. Seeman Printery for *Duke University Press*, Durham, 1946. \$3.75 check with order, or \$4 on credit.

In a review of an earlier edition of this book this reviewer said that the book would be of vast assistance to all those having to do with the management of illness among infants and children, and that it contained the answer to almost any pediatric problem. The present edition is well worthy of the same comment, as the only change is to record all the advancements that have been made in the interval.

The patients of every general practitioner and of every pediatrician, will be well served by their doctors making daily use of the *Complete Pediatrician*.

**Rheumatic Fever—Childhood's Greatest Enemy**, by Herbert Yahraes, is Pamphlet No. 126 in the series of popular, factual, ten-cent pamphlets issued by the Public Affairs Committee, Inc., nonprofit educational organization at 22 East 38th Street, New York 16, N. Y.

In New York City the average yearly deaths from 1942 to 1945 were: from meningitis, 158; whooping cough, 42; poliomyelitis, 41; measles, 11; diphtheria, 11; scarlet fever, 8—from *rheumatic fever and heart disease* 1281.

The London County Council's Rheumatism Scheme, which got under way in 1926, is described in the pamphlet as an example of a successful community plan. As a result of this coöperative effort in England by school and health authorities, by private and by public institutions, the incidence of acquired heart disease among London school children dropped from 2 per cent to 0.8 per cent in ten years, and there was a considerable decrease in the number of chronic cardiac invalids. In carrying out this scheme, London provided one hospital bed for every 550 school children.

**Advances in Sulfonamide Therapy Shown at New York Academy of Medicine**

Three new principles in sulfonamide therapy are stressed in the scientific exhibit recently installed at the New York Academy of Medicine by Schering Corporation. A saturated aqueous or urinary solution of one sulfonamide can be saturated still further with a different sulfonamide, each drug behaving as though it were present alone and

exerting no effect on the solubility of the other. Thus the full sulfonamide effect is obtained with a greatly lessened danger of crystalluria. This greater safety is obtained by using equal parts of sulfadiazine and sulfathiazole (as in Schering's Combisul-TD), with each drug present in exactly half the usual unit dosage.

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#### ACUTE LARYNGOTRACHEOBRONCHITIS

(P. B. MacCready, New Haven, in *Dig. Ophthalm. & Otolaryng.*, Jan.)

Immediately upon admission the patient is examined. If it is not necessary to do an immediate tracheotomy he is placed in the steam room and sulfadiazine is started. If possible this is given by mouth, otherwise the sodium salt is given in normal saline, to be followed by an infusion of saline and glucose. Dosage is at the rate of 1 grain per lb. per day with half of this amount being given as the initial dose. Blood transfusions are occasionally given, but not to the extent previously used.

In a series of 73 cases, there were eight cases of tension pneumothorax and mediastinal emphysema. Five of these patients had had a preliminary bronchoscopy or the bronchoscope was passed in order to facilitate the tracheotomy.

#### DETECTION OF LIVER DYSFUNCTION

(V. A. Drill, New Haven, in *Yale J. Biol. & Med.*, 18:345-358, 1946)

Liver damage and dysfunction may be detected soon after symptoms of infectious hepatitis appear by abnormal bromsulfalein excretion, bilirubinuria and bilirubinemia, increase of serum phosphatase and cephalin-cholesterol flocculation. Of these, bromsulfalein excretion and urinary bile

content were the most sensitive in 12 volunteers inoculated with homologous serum jaundice or infectious hepatitis.

Before jaundice becomes noticeable, cephalin-cholesterol flocculation and dye retention are reliable indications of liver damage. As the disease subsides, serum phosphatase and bilirubin and bromsulfalein excretion become normal before urobilinogen and bilirubin diminish in the urine. Cephalin-cholesterol flocculation persists after all other evidence of hepatic disorder has disappeared.

#### TEMPERATURE BY MOUTH MAY BE HIGHER THAN BY RECTUM

(E. M. Rappaport, Clinton, Iowa, in *Ann. Int. Med.*, 25:1-14, 1946)

Twenty-five patients were observed with higher than normal oral t. for which no cause was discernible. The men had been hospitalized on the average for four months each for dissimilar complaints. When initial symptoms subsided, oral t. remained elevated although rectal t. were normal. In 10 patients the oral peak t. during a 10-day period exceeded the rectal peak.

When rectal t. remains normal, oral elevation may be considered a manifestation of vasomotor instability.

#### AIR EMBOLISM

(H. H. Joffe and A. H. Wells, Duluth, in *Minn. Med.*, Dec.)

We have presented two fatal cases of air embolism, one the result of severe coughing with rupture of lungs and interstitial emphysema complicating unresolved pneumonia, the other occurring during a simple closure of a colostomy. A list of various diagnostic and therapeutic procedures, also traumatic and disease processes associated with air embolus, have been reviewed.

It is suggested that a large tight syringe and long needle be kept at hand while performing any of the various diagnostic or therapeutic procedures which might result in air embolism. At the first signs of this complication, the right ventricle should be aspirated.



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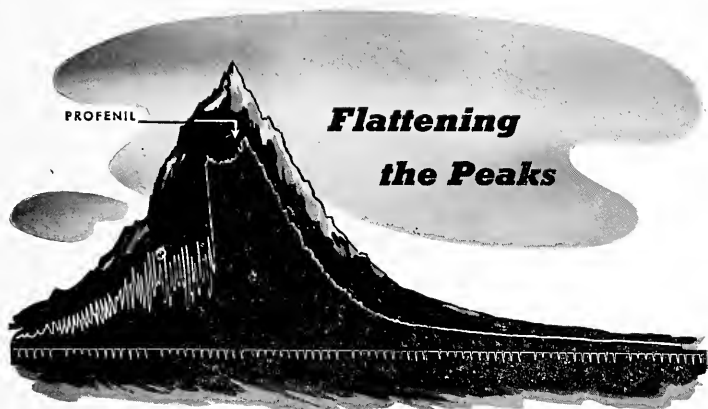
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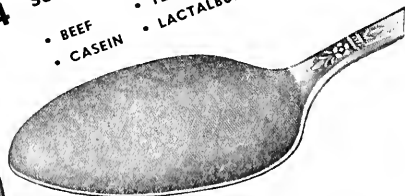
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JAMES M. NORTINGTON, M.D., Editor

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Presidential Address.

## The Carcinogenic Action of Hormones

JOHN WYATT DAVIS, JR., M. D., Lynchburg, Virginia

**M**EMBERS of the Tri-State Medical Association, Ladies and Guests: I have chosen my subject more because of interest in the subject, than because of knowledge of it. This paper is not written from practical experience, but is based entirely upon authentic, recent information on the subject.

The majority of these papers have been written since 1935. From 1935 to 1940 there was a moderate amount of interest shown as judged from the number of papers written; from 1940 until the present time there has been a great acceleration in interest in this subject. I have been impressed by the differences of opinion of various writers as to just what the administration of hormones to humans has to do with the development of cancer, either shortly after the administration or several years later.

Here it might be wise to recall briefly what we have been able to learn of the etiology of cancer. Differences of opinion is frequently the greatest promoting factor in bringing about additional study. It is only through exhaustive study, the correlation of facts obtained from animal experimentation as related to similar conditions in the human body, and the information contained in case reports from various cancer clinics that additional

knowledge of the carcinogenesis of hormones can be obtained.

Ambroise Paré, in 1575, stated the cause of cancer as two-fold—antecedent and immediate; and since that time, with all the myriad researches on the subject, this concept still holds. In 1938, C. C. Little divided the antecedent into (a) the genetic constitution of the tissue affected, and (b) the external environmental conditions; namely, sex, physiologic age and similar influences. The immediate was described as some physiological unbalance or irritation caused by hypo- or hyperfunction of tissues, or experimentally induced by the application of chemical or physical agents.

The next portion of this paper will deal with instances of cancer which can be shown to be influenced either favorably or unfavorably by hormones, and then from this information we can derive principles which may be of benefit in increasing our knowledge of the altered physiology involved in cancer.

First, let us consider animal experimentation: Nathanson,<sup>1</sup> in 1944, evaluated the more significant experimental and clinical aspects of the relation of hormones to carcinogenesis. This article dealt with a wide variety of tumors, mostly cancer in mice. The incidence of cancer was increased by the injection of estrogens, but some increase was caused by the transplantation of the anterior lobe of the hypophysis, when conditions were favorable

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgewick Inn, Greensboro, N. C., March 3d and 4th.

for the long survival of the transplant. However, the administration of gonadotropins had no influence on the incidence and course of spontaneous cancer in mice. Spontaneous tumors of the hypophysis seldom occur in mice or rats, but three groups of investigators reported hypertrophy of the pituitary gland in the formation of chromophobe adenomas in mice and rats of both sexes after prolonged treatment with estrogens. In regard to the occurrence of lymphoid tumors and leukemia, these conditions arise spontaneously in some strains of mice and rats. However, the injection of estrogens in any strain of mice that has a tendency to develop such lesions, causes an increase in incidence of these lesions. In no species was cancer produced in the male by injection of either estrogen or androgen (the male hormone). His concluding paragraph dealt with spindle-cell sarcomas in mice and rats that developed at the site of injection of estrogens in oil. This could not be considered a result of the systemic effect, but was due to local irritation. But these lesions have also appeared after the injections of substances other than estrogens that were dissolved in oil. Injections of estrogens increased the incidence in males and decreased the age at which tumors appeared in both sexes.

Summarizing Nathanson's paper we have the following information:

A wide variety of tumors can be produced or altered in the experimental animal, but these are dependent on the species, the strain; and what seems most important—the individual susceptibility of the animal. In addition to this, there always seems to be some limiting factor in those attempts to produce cancer that were unsuccessful. Although translating these observations to the study of human cancer is difficult, nevertheless, this knowledge is important in the general study of tumors.

Shimkin and Grady<sup>2</sup> obtained striking results in three separate experiments. In two series the stilbestrol was given orally in sesame oil, and in one series it was given subcutaneously. Stilbestrol was more toxic when given subcutaneously. Prior to the death of the mice, there was noticed a gradual loss of weight, which was not due to a decrease in the amount of food consumed, but probably resulted from a retardation of growth. There developed some atrophy of the viscera, especially the spleen, decreased spermatogenesis and finally the development of mammary adenocarcinoma. Even after death, from lethal doses of stilbestrol in sesame oil, there were found no lesions of the liver.

Since it has been shown clearly that mammary carcinoma can be produced or stimulated in mice by the administration of estrogens, the logical consequence of this knowledge was that the administration of androgens or male hormones could counteract the carcinogenic effect of estrogens. This result was achieved by Raynaud, Lacassagne, Mur-

lin and his collaborators, and other investigators.

This principle of treating cancer in one sex by the administration of hormones of the opposite sex has been employed for several years, and the results of such treatment have been encouraging. Abel<sup>3</sup> found the task of obtaining material for such a study a difficult one, due to the fact that in no case of early cancer were the accepted modes of treatment withheld for experimental purposes. Testosterone was not given patients who had received either surgical or radiation therapy, because the evaluation of clinical results in these cases would not be accurate.

As a result of these two decisions, testosterone was given only to those patients who had not responded to the orthodox forms of treatment, and to those unfortunates for whom nothing else could be done. This series consisted of five hopeless cases, ranging in age from 39 to 60 years. Some of these received 150 milligrams orally per week; others received three injections, of 50 milligrams each, intramuscularly per week. After ten months of this treatment all the patients showed a marked improvement in morale, in some cases bordering on euphoria; all experienced a decrease in menopausal symptoms such as nervousness, headache, mental depressions; and in most cases the severity and frequency of hot flashes were decreased.

These results, in themselves, I think justified the administration of male hormones to this pathetic group, although there was no indication of any regression or retardation of malignant processes.

Adair and Herrmann<sup>4</sup> reported on a series of eleven cases in which testosterone propionate was administered in the treatment of advanced carcinoma of the breast.

Of these eleven patients, all given massive doses of testosterone propionate, four showed favorable response. There was no change in the blood picture, but there was an increase in weight, which may have resulted from nitrogen retention. Improvement was manifested by regression of the primary lesions and disappearance of pain. In no case were there any toxic effects noted. The duration of this favorable response, as well as the amount of testosterone propionate necessary to maintain this improved condition is not known.

The men have purposely been reserved for last, because the results obtained by the administration of the old ladies' hormone to old men with carcinoma has proved strikingly beneficial. In fact, the results are comparable to the results obtained in the administration of hormones in the well defined glandular deficiencies. It has also been found that the administration of male hormones results, in many cases, in an aggravation of symptoms and, in some, in activation of the growth of cancer.

A series of thirty-seven cases was studied. The natural hormone, estradiol, was administered by

mouth. This natural hormone produces less breast stimulation as well as less gastric irritation. Beneficial results were obtained in a large majority of the cases. Considered from a standpoint of safety, economy and comparable results, treatment with estradiol, or even stilbestrol is much more desirable than surgery.

The most common use of estrogens, either natural or synthetic, is in the treatment of the menopausal syndrome. Since the oral administration is more time-saving for the doctor, more convenient for the patient, and in the majority of cases the results are just as satisfactory, this is the usual mode of treatment.

In regard to the carcinogenic potentiality of estrogens, I think the extent of our knowledge can be summarized as follows: Estrogens increase the incidence of mammary cancer in certain strains of susceptible mice and rats, and in these animals it can incite cancer-like tissue proliferation in other parts of the body, but only occasionally produces cancer. No observations prove that estrogen is the only factor involved, in fact, an estrogen becomes a carcinogenic factor only when used on a strain of mice that have a strong hereditary tendency toward the formation of cancer.

Little is known of the effects of prolonged administration of estrogenic hormones in humans. In Mozer and Israel's report of a large series, there was nothing to indicate that tumor growth was stimulated. However, it is known that tumor production in experimental animals may be delayed, and because of this fact, it is wise to be on the lookout for untoward effects in clinical medicine, particularly in relation to breast reactions, even though these hormones frequently relieve discomfort in this area and in some cases even cause cysts to decrease in size.

I wish to say something about a more recent form of hormone therapy and one which will probably interest the ladies more than the medical profession, since it deals with beauty rather than health. It is the use of estrogenic hormones in cosmetics.

The concentration of estrogenic substances per ounce in the better known cosmetic hormone creams is 7500 to 10,000 international units per ounce. When used in the customary manner and quantity, the hormone potency is much below the level required to produce any systemic action, since the amount of cream used daily would contain only about 500 international units. As the skin absorbs only 40 per cent or less, the maximum amount of estrogen absorbed would be some 200 international units.

According to the *New and Non-Official Remedies* (a publication of the A. M. A.) the therapeutic dose is 2,000 to 10,000 international units by intra-

muscular injection one or more times weekly. Sometimes the amount required is 50,000 international units per week. The absorption from intramuscular injection is practically complete. Thus it is very clear that the amount of estrogens absorbed from the local application of hormone creams is far below the level required to produce any systemic effect. But there is an abundance of evidence that the application of hormone cream does produce a definite local effect.

There have been numerous well controlled experiments using hormone creams in which the same cream without the hormone was used on the corresponding opposite side of the body. The general results were as follows:

- (1) The skin became smoother.
- (2) The number and size of the capillaries were increased.
- (3) The elastic fibrils became more numerous.
- (4) Senile pigmentation and freckling were diminished.
- (5) There was evidence of regeneration of the surface epithelium, with an increased water content of the estrogen-treated areas.
- (6) The topical use of estrogens produced a greater effect on the skin than therapeutic doses given intramuscularly or orally.

Since hormone cosmetics are beneficial from the standpoint of appearance, it is pertinent to inquire, are hormone cosmetics risky to use? The following facts are emphasized:

(1) Regardless of the concentration of estrogen used in a cosmetic cream, it has never produced a case of human cancer. Incidentally, it has been proved that creams with a potency greater than 7,500 to 10,000 international units per ounce are neither necessary nor justified.

(2) No case of animal cancer has ever been produced except in animals which were known to be especially susceptible to cancer, and then only by the use of enormous doses.

(3) The last fact is that cases of pigmented senile hyperkeratosis, which are classified with pre-cancerous lesions of the skin, have been favorably influenced by estrogens, and in some cases prolonged topical application has been followed by complete regression.

Before leaving the subject of estrogens let me repeat the necessity of being cautious because we are dealing with a drug whose far-reaching effects are not thoroughly understood; and although we believe the carcinogenic importance of estrogens is strictly limited by biologic conditions to certain species of mammalia, we feel that this evidence is still not sufficient to warrant the abandonment of caution in the use of large doses of these hormones in clinical practice. We have no knowledge of the

## CAUDAL ANALGESIA\*

### A Method of Control of Pain and Hemorrhage in Childbirth

KENNETH E. NEESE, M.D., Monroe, North Carolina

**T**HE PURPOSE of this paper is not to advocate caudal analgesia as the ideal method of control of pain and hemorrhage in childbirth. It has its shortcomings and its dangers, and these things I want to bring to your attention, as well as its advantages.

Since the initial use of the caudal canal by Cathelin and Secard<sup>1</sup> of Paris as an avenue of introduction of an anesthetic agent into the body, sporadic attempts have been made to utilize this method of analgesia in many surgical, urological and obstetrical procedures. Stoekel<sup>2</sup> of Germany was probably the first to use it in obstetrics. In the 1920's and 1930's, various investigators, including Oldham, Lundy, Rucker, Campbell, Baptiste<sup>3 4 5</sup> reported series of single-shot caudals in obstetrical practice. In 1942, Hingson and Edwards,<sup>6</sup> using the same principle Lemmon and Paschal<sup>7</sup> were using in the continuous spinal anesthesia, applied it to caudal analgesia. Of course, you remember the publicity and the fanfare that accompanied the announcement of painless childbirth.

Let me list the accepted requirements of the ideal obstetrical analgesia:

- (1) It must be universally applicable.
- (2) It should be relatively inexpensive.
- (3) It should be easily administered.
- (4) It should have no deleterious effect on the forces of labor.
- (5) It must not be dangerous to the mother.
- (6) It must not be dangerous to the infant.

(1) Obviously, caudal analgesia is not universally applicable. It should not be used except in a fairly well staffed hospital. At present, it is estimated that 70 per cent of women are delivered in the home or in poorly equipped hospitals. Forty per cent of the remainder, according to Dr. Hingson, offer technical or obstetrical difficulties to the caudal. To list some of these, we find the following:

- (a) 10% precipitate labors
- (b) 10% apprehension or fear of the caudal
- (c) 10% syphilis of the spine or central nervous system
- (d) 3% obesity

(e) 2% local infection

(f) 5% obstetrical difficulties as placenta previa, premature separation of the placenta, cephalo-pelvic disproportion, unengaged head in the primipara, monstrosities, known fetal deaths, sensitivity to the drug, etc.

Obviously, it is not universally acceptable.

(2) When one realizes that the doctor, an especially trained nurse, or an anesthetist must stay with the patient at all times, it is not likely to be inexpensive.

(3) One should have special training in the anatomy and the physiology of the caudal area. Marked variations in the structure of the sacrum involving the caudal area is, of course, well known. The location of the principal veins and location and functions of the nerves in the caudal canal should be well understood. A rigorously sterile technique must be observed and adequate facilities for dealing with accidents must be at hand. For these reasons, the procedure must be done in a hospital fairly well equipped in materiel and personnel.

To most of us, it takes long tedious experience before we can become proficient in penetrating the caudal canal, and many cases must be followed throughout the course of labor to learn the many technical difficulties which develop and must be solved. Needles become dislodged; the effect of the analgesia becomes harder to obtain if sensation is allowed to return before supplemental doses are given or if it is given over a long period of time; progress of labor may be slowed considerably; rupturing the membranes or emptying the bladder may accelerate the progress of labor in some cases; yes, many things are learned by watching numerous cases throughout labor.

It is time-consuming, and in these days of overburdening medical work, this is important. The caudal is not easy to administer, but it becomes easier in proportion to the number you do.

(4) One of the least desirable features is the effect on the forces of labor.<sup>8</sup> The perineal reflexes are abolished, the secondary abdominal forces are not stimulated, and the patient does not bear down with her pains. The absence of the secondary abdominal force and the relaxed pelvic floor is supposed to encourage persistent posterior occiput position and the transverse arrest, but this has not

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgelynn Inn, Greensboro, N. C., March 3d and 4th.

been my experience. These conditions may occur in incidence greater than normal if the caudal is started earlier than I start them. If the patient is watched for contractions of the uterus and is told to bear down, the normal mechanism of labor can be pretty well simulated.

(5) Danger to the mother—All anesthetics or analgesics carry some risk. Let us compare these figures. I was with Dr. Hingson<sup>9</sup> in Memphis last February and he showed me a summation of 150,000 cases of caudal analgesia. There had been thirty reported deaths; twenty of these were definitely ruled out as having any relation to the analgesia used; ten cases were ruled as anesthetic deaths or deaths due to the caudal analgesia. This is one death to 15,000 cases.

Stander<sup>10</sup> reports one death to 20,000 deliveries in the New York Lying-in Hospital using other anesthetic procedures. Norton<sup>11</sup> reported in the *Ob-Gyn. Journal*, 1945, on 66,000 deliveries in the Margaret Hague Hospital, eight anesthetic deaths or one in 8,297.

Another factor to be considered is the newness of the use of the caudal and the inexperience of those who are using it. I understood Hingson to compare these favorable figures with the over-all maternity mortality (which in North Carolina was 3 per 1000 in 1944, and 2.7 per 1000 in 1945). If this was intended, the comparison was erroneous because the mortality just during the caudal should not be compared with the over-all maternal mortality, which would include such conditions as placenta previa, premature separation, etc. He showed like favorable figures relative to infant mortality.

A study of each of these deaths revealed in most cases failure of the operator to carry out the recognized necessary precautions. The most important of these is the use of the test or safe spinal dose of the agent (metacaine, procaine, etc.), before the therapeutic dose is given. This was often neglected when the single dose method was being used.

(6) Passing to the last requirement: it must not endanger the child. Here, I believe, the caudal has one of its greatest advantages. The baby is not depressed as we often see when other types of analgesic or amnesic drugs are used. There seems actually to be a stimulating effect on the respiratory system of the child. It is very satisfying to deliver a wide-awake, vigorous child that will cry readily, many times before the delivery is completed. The pressure on the head is not as great due to relaxation of the perineal muscles. One does not have to worry usually about the damage to the sensitive fore brain cells due to the prolonged anoxemia.

It is true that most women, particularly the primipara, must be delivered with the low or outlet forceps. The third stage is usually short and easily

conduct. I usually give 1 c.c. pituitrin at the end of the second stage, 1 c.c. ergotrate at the end of the third stage, and 2 c.c. demerol before the patient leaves the delivery room. Afterpains come early and severe if the demerol or some opiate is omitted.

The caudal is usually begun when the cervix is one-half to two-thirds dilated, depending upon the thickness of the cervix, the progress of labor and the station of the presenting part. Preparation of the patient, the episiotomy and repair can be done without pain or the relaxing effect of a general anesthetic.

As for the control of hemorrhage: it has no part in the control of hemorrhage from premature separation of the placenta, placenta previa, lacerated uterus or cervix. It does have a restraining influence on hemorrhage caused by a relaxed postpartum uterus. Measured and estimated volume of blood loss shows a ratio of one to three in the caudal cases, according to most investigators.<sup>1</sup>

Hemorrhage is fast becoming the number-one killer of the parturient woman since the use of sulfonamides and the biotics against infections. This aid in the control of hemorrhage has become even more important. With a conscious and co-operative patient, sterility can be more easily controlled. The patients' resistance to infection and other complications is not as much lowered by the greater loss of blood.

I have not gone into the technique of administering the caudal. Again I say, one should have special training. Sterile precautions must be thoroughly observed. The anatomy and the physiology relative to the caudal area must be understood. Adequate facilities for dealing with accidents must be at hand.

Caudal obstetrical anesthesia has special advantages in certain types of cases, such as premature labor, breech deliveries, cardiac and pulmonary cases, and other cases where the usual stress and strain of normal labor and delivery is best avoided.

I have done between 150 and 200 caudal analgesia cases without maternal mortality and without maternal morbidity attributable to the analgesia other than an occasional case of nausea, vomiting and headache. There have been no instances of infection at the site of the needle entrances, and no cases of respiratory failure. A few cases have had to be catheterized, but this has not been troublesome.

As stated before, I have not had a great number of posterior occiputs or persistent transverse arrest, but I do believe this condition will occur more frequently if the caudal is started earlier than I describe. A drop in blood pressure of 20 points following the initial dose of the drug and of short duration is common,<sup>8</sup> but ephedrine sulphate intra-

muscularly or intravenously does very well in correcting this complication.

I have entered the sub-dural space twice with a 2½-inch needle, but in both cases this was readily recognized by the free flow of spinal fluid from the needle and no drug was administered. A vein has been punctured with a free flow of blood many times. I release the stylet, partially withdraw the needle, replace the needle and aspirate. If no blood is withdrawn, I proceed with the caudal. I have had no cause to regret this procedure.

Ability to penetrate the caudal canal has become easier the more cases I have done. The longer I use it, the greater is my percentage of success. I find patients much easier to handle than when I was using hyoscine and nembutal (or demerol). With the present shortage of help in our hospital, that is quite an advantage.

If everything turns out well, the doctor has a happy, loyal friend who is generous with her praise. If something happens to her or her child, regardless of how unrelated it is to the analgesia, strong suspicion is directed toward the "shot in the back" which "numbs the nerves," and which they invariably call a spinal anesthesia. When one gives medicine through a needle in the back, it is pretty difficult to explain to a patient that it is not a spinal anesthesia, and there is much fear of a spinal in this section of the country. They have a great fear of a resulting paralysis.

A few weeks ago, a patient requested that she not be given the caudal for fear of a paralysis. The next day after her delivery, she had a complete right-sided Bell's palsy. I am still thankful that I did not give the caudal to her, for no one would have believed that this paralysis was not due to this procedure.

At times it seems to me that most every one has the backache, and especially women. Some medical teacher of former times has defined woman as, "A constipated biped with the backache." Since it is natural for humans to blame their ills on something, a woman who has had a caudal is very apt to blame her backache on it, although I do not see how it could be responsible for any prolonged pain in this region.

As my experience with caudal analgesia increases I am more and more impressed with the conclusion of Donnelly<sup>12</sup> that this procedure constitutes one of the most important advances in obstetrical analgesia since Simpson introduced the use of inhalation anesthesia in this field in 1847.

When the advantages and disadvantages are evaluated, I believe the caudal analgesia has a place in the obstetrical armamentarium, and can be used to a great advantage in a selected number of labor cases.

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#### Discussion

DR. H. J. LANGSTON: Gentlemen: I enjoyed very much Dr. Neese's paper. I have been delivering babies for 25 years and I may say that the patient who appreciates generous giving of your time to her ailments during the period of growing a baby, of your best judgment and care during the process of labor and, at the proper time, assisting her through that second stage, repairing the birth canal properly, and watching her through a six-weeks postpartum period—doing everything to the end that you may return her to her husband as a wife—after all of that, if you are accorded good will and esteem, you are a fortunate person. Husband, older women kin, neighbors, and other self-appointed critics have all during that period been watching you with eyes keen to detect any departure from their own notions of how the case should be managed.

I have read a good many papers on caudal anesthesia. Dr. Neese has presented the subject conservatively. I have used low-spinal anesthesia in a number of cases for delivery, both by the birth canal and by Caesarian section, and most of those patients were very appreciative. As to dangerous procedures in labor, I am convinced that giving pituitary extract is far more dangerous than caudal or low-spinal injections. I never give it any more because I am perfectly convinced that I have seen two patients die from it. Some Washington obstetrician some years ago had delivered a patient and decided to give 0.5 c.c. pituitrin and before she left the delivery room he thought she was going to die. In the office two weeks later, he gave her 2 minims to test sensitivity, and bless my life, he thought she was going to die from that. I don't give it any more. I wish we would get to the place where pituitary extracts in obstetrics were wiped off the slate. Hyoscine and morphine I think is all you need—intramuscularly, not in the vein. It will take care of most of the postpartum hemorrhage. The time to take care of postpartum hemorrhage is six months before delivery. Ninety per cent of all pregnant women are anemic and there are drugs we can give to keep the blood up to normal. Any type of iron you wish to give



## Carcinoma of the Colon\*

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THIS presentation deals with the surgical treatment of cancer of the colon and rectum as done by Drs. F. S. Johns, D. S. Daniel and W. A. Jones from 1938 to 1947. I shall present our series of 114 cases in some detail, with emphasis on the advantages of the aseptic immediate anastomosis technique. We were all three trained in the modified Bloch-Paul-Mikulicz procedure, and feel qualified to discuss its disadvantages as well as our preference for immediate anastomosis. In 1913 when one of us (F. S. J.) began his surgical training, the Mikulicz delayed anastomosis was the most popular operation for cancer of the colon. It has remained in general favor ever since, and no great improvement in its results can be noted through the past thirty years. In the same period general surgery has advanced rapidly in many fields, particularly those of the brain, chest, lungs and vascular system. Prior to Stone's work, surgery of the colon from a technical viewpoint had changed little for the better. This is a broad statement, but it is validated by a comparison of our progress in this field with advances made in many other departments.

Since 1940 we have, with one exception, consistently done the one-stage primary aseptic anastomosis for cancer of the colon, and have found the Stone clamp an invaluable tool. For its smaller size, lightness and adaptability, the Stone clamp is an improvement over all former instruments for its purpose. Stone's own series to date includes some 200 cases operated on by this method. For lesions of recto-sigmoid and rectum we recommend the one-stage abdomino-perineal resection (Miles operation).

No essay on intestinal anastomosis can omit a tribute to the Frenchman, Jean Francois Reybard (1795-1863). An experimental surgeon and anatomist, Reybard carried out the first successful resection with immediate anastomosis for cancer of the colon on May 2nd, 1833. The patient recovered and lived for one year after operation. Reybard's case was not reported before the Academy of Medicine of France until July 30th, 1843. His original article was entitled "Report of a malignant tumor of the colon; resection of the tumor and of the intestine; direct and immediate anastomosis of the two ends of that organ. Recovery."

Immediate anastomosis was already a subject of

controversy, but according to his biographer, Reybard's contribution served as "the point of departure" from which modern colon surgery evolves; his work "opened the way" to the great Vienna surgeon, Billroth, *et als.*; to the Londoner, John Marshall; to Czerny, the Bohemian; and to von Volkmann. In 1878 von Volkmann was the first to excise the rectum for cancer. Von Volkmann's classic procedure, as later carried out and perfected by Miles, remains the standard operation for cancer of the rectum and recto-sigmoid.

Mikulicz, a native of Poland, was Billroth's most famous pupil. The delayed anastomosis procedure named for him was a departure in principle and technique from that of his preceptors. It is interesting today to observe a cycle in the history of colon surgery, as regards immediate anastomosis: from Reybard to Billroth to Bloch-Paul and Mikulicz to Stone.

Prominent among current contributors to the literature of this subject besides Stone are the familiar names: Parker, Kerr, Rankin, Lahey, Collier and Wangenstein.

The etiology of carcinoma of the large bowel is still undetermined. In fact, we know as little about it as we know about the cause of cancer anywhere. We are less certain than Professor Nussbaum who wrote in 1875 that "as causes of cancer may be cited old age, chagrin and great mental anxiety." We are perhaps a little closer to a long-sought truth than was our colleague who published an article on "lacing" as the reason for cancer of the uterus. The most popular and likely cause of these lesions, as advanced to date, is the association of polyps with carcinoma of the colon. The percentage of carcinomas that develop on polyps is not definitely determined; but it is certain that polyps undergo malignant degeneration. The percentage of benign polyps which become malignant is also, of course, unknown. It has been stated that carcinoma occurs eight times as often in the sigmoid and rectum as elsewhere in the colon. Polyps seem to follow about the same distribution, and this arouses interesting speculation. It appears also to substantiate the opinion that 40 to 50 per cent of polyps become malignant.

In 1945, 2,687 deaths from cancer were reported to the Virginia Bureau of Vital Statistics. Of this number 476 (17.6%) were recorded as cancer of the intestines and the rectum.

The early symptoms of malignant lesions of the large intestine are the symptoms in which we are

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primarily interested. The classic textbook symptoms are late in appearing. During passage through the colon the consistency of the bowel contents changes from liquid or semi-solid on entrance into the right side to that of a firm, formed stool in the left side. It is natural that any lesion encroaching on the lumen of the colon should produce different symptoms at different sites during this transition.

All of our cases of carcinoma of the rectum gave a history of some change in bowel habits, and 84 per cent had a history of the appearance of blood in the stool. Eighty-eight per cent of our cases of carcinoma of the left colon gave a history of some obstructive symptoms—pain, cramps, nausea, distention, constipation, or inability to get the bowels to move. The predominant symptoms of lesions of the right colon were diarrhea, bloody stools, pain in the right, lower quadrant, the presence of a mass, soreness on the right side, weakness and anemia.

A careful physical examination is essential, and we emphasize the value of a digital rectal examination and a proctoscopic and sigmoidoscopic examination in all suspected cases of such malignancy. In a large percentage of cases of carcinoma of the large intestine, the lesion occurs in the region where it can be felt or seen by these examinations, which require no expensive apparatus, and which are not hard to do. Frequently, in lesions of the right colon a mass can be felt by abdominal palpation.

X-ray examination of the colon may be most helpful, but a negative x-ray picture is not conclusive evidence that no lesion exists. Dr. Dan F. Jones stated that roentgenology as an aid to diagnosis is accurate in 65 to 85 per cent only of malignant lesion of the colon, and is accurate in an even lower percentage of lesions of the rectum.

Meticulous care in preparation for operation is essential. Every patient must be properly prepared from a general physical standpoint. If anemia exists, transfusions should be given until a normal blood picture is maintained. Both the blood picture and the blood chemistry showing should be normal; any abnormality thereof can usually be corrected by proper preoperative dietary measures. In cases of obstruction, intravenous methods are used. Radical operative procedures should be delayed until the patient's general condition has reached what is regarded as its maximum. The operation for cancer of the colon or rectum is a major procedure, but it is not an emergency operation.

Good surgery in this field; i.e., a low mortality rate and good end-results, depends to a great extent on the proper preoperative preparation of the bowel. If obstruction to any degree exists, it is imperative that the bowel be decompressed. No general rule can be laid down on how to accomplish this objective. For a partial obstruction of no great degree a liquid diet, mild cathartics and

enemas may accomplish the wanted result. In cases of obstruction of greater degree, decompression must be obtained either by use of the Miller-Abbott tube or by a temporary ileostomy, cecostomy or colostomy above the lesion. In lesions of the left side, when necessary, a temporary transverse colostomy is preferred. In lesions of the right side decompression can usually be obtained through proper use of the Miller-Abbott tube. In our cases the use of this tube has prevented the necessity of performing many a temporary colostomy; in our series of 49 colon cases we found it necessary to perform five cecostomies and two colostomies for decompression. We have avoided ileostomies in conjunction with the operation, since reports show that this procedure increases mortality and is both unnecessary and unwise. However, radical surgical procedures cannot be carried out on a distended or edematous bowel. We believe the leakage sometimes reported as following intestinal anastomosis may be due to such an attempt to suture a distended or edematous bowel.

Before operation the bowel should have been thoroughly evacuated. Patients are placed on a low-residue diet on admission; mineral oil and a mild saline cathartic and enemas are given daily. To eliminate all non-digestive residue the diet is changed to liquids three days before operation. A thorough cleansing enema is given the morning of operation. The use of sulfa drugs by mouth to decrease the bacterial flora of the intestinal tract may be helpful. At present we are using sulfasuxidine. In our series of 40 primary aseptic end-to-end anastomoses 21 received some sulfonamide preoperatively. Of our 45 rectal cases, 34 received some sulfonamide. We do not advocate the local intra- or extra-peritoneal use of sulfonamides.

General anesthesia, by an experienced M.D.-anesthetist, is our choice and practice. Intravenous fluids are started when the patient reaches the operating table and blood is substituted as needed. Shock is much easier to prevent than to treat. In almost all of our cases blood is given in the course of the operation.

Making full use of the improved Stone clamps leaves no excuse for contamination in surgery of the colon. After the clamps are applied the gut is excised with an electric knife and the borders are thoroughly coagulated. This renders the field of operation entirely aseptic. After putting in the sutures and removing the clamps, we have never had a leak. Nor do we feel that our technique is superior to that of other qualified operators doing colon surgery. Success is largely due to the preparation given each patient and to the use of instruments now available.

For our cases of resection of the recto-sigmoid and rectum the Miles operation has been most successful in our hands. It provides opportunity to

carry out a complete dissection in the pelvis, and at the same time it can be done in one stage. In recent discussions on this subject we mark a growing tendency to preserve the sphincter muscle. We have made no attempt to follow this lead. If a high operability is to be maintained in cases of carcinoma of the rectum and recto-sigmoid, the operation must be radical with a complete excision of all glands. We believe that if undue consideration is given to sparing the sphincter, the operator will have this idea constantly before him, a less radical resection may be performed, and a higher percentage of recurrences will result. Therefore, we do not at present subscribe to this procedure, however tempting. In several of our cases, both of colon and rectum, we have excised the local growth in spite of the presence of a limited liver metastasis. We believe that life is prolonged and made more comfortably by this radical procedure.

Postoperative treatment varies according to the type of operation performed. Following primary aseptic anastomosis, patients are allowed nothing by mouth for the first 48 hours, then only water for 24 hours, then clear liquids. The diet is gradually increased until by the sixth day they are usually on a soft diet. Fluid and protein balance are maintained by the intravenous route. Blood transfusions are given as indicated. If any distention occurs a Miller-Abbott tube is passed. Enemas are contraindicated. On the fourth or fifth postoperative day, these patients are started on mineral oil, oz. 1, b. i. d. The generally accepted rules of postoperative care are also followed.

Following the one-stage abdomino-perineal procedure, postoperative care is similar to that for colon resection, except for the local care of the colostomy and of the perineal wound. The colostomy is usually opened after 24 hours and is irrigated on the third day. Aluminum paste is applied around the colostomy to protect the skin and wound. We rarely encounter any infection in these wounds, and we always place the colostomy in the mid-line through the incision. The packing used inside the perineal wound is partially removed on the third day; subsequent partial removal is done daily until removal is completed by the fifth or sixth day after operation. This wound is irrigated daily until healing occurs.

It is unfortunate that some sentiment exists against colostomy. This is not confined to the laity. The physician often expresses himself too freely on this subject, to his patients' detriment. Surely a colostomy is not an ideal solution of any one of these problems. It is a regrettable compromise; but a compromise which is compatible with a useful life, and one of which few patients complain. Our patients must be led to realize that a colostomy is a life-saving device and absolutely necessary.

The most frequent complication in this type of surgery is the inability of the male patient to void after abdomino-perineal resection of the rectum. Many of these cases are complicated by some hypertrophy of the prostate. An indwelling catheter is always inserted just prior to operation. We have tried in some cases leaving this catheter so placed for several days, and in others have removed it immediately after operation and catheterized as indicated. Some are able to void, but a high percentage have difficulty. Getting these patients out of bed early is helpful in preventing and treating this complication, but a wholly satisfactory solution has not been found.

Urinary infection is another postoperative complication occasionally seen. We treat these infections with the various chemotherapeutic agents available to date.

Among recent reports from several great clinics, Mayo and Lovelace state as to malignant lesions of the cecum and ascending colon: "In the 590 cases in which operations were carried out with view of cure, there were 315 in which a one-stage resection was performed, 246 in which a two-stage was utilized . . . 29 in which more than two stages were employed." Hospital mortality in this report was: for one-stage, 22.2 per cent; for two-stage, 28.9 per cent. Two-stage mortality included 15 per cent after first operation, 13.9 per cent after second operation. There were 10 deaths in the third group of 29 cases. As to survival; the one-stage operation showed a higher rate than the two-stage. Hospital stay for these one-stage patients averaged 21 days; for two-stage, 45 days.

In December, 1945, Waugh and Custis reported 50 cases operated on at one stage, with 2 deaths (4%). Coller and Ransom had 8.9 per cent operative deaths. Coller and Vaughan in 1944: "For many years we employed the exteriorization operation in our clinic—first the Mikulicz, then the Rankin obstruction resection with far better results. We report 68 patients done by one-stage procedure. . . . This aseptic method has become increasingly popular with our surgeons."

Since 1938 we have seen 114 cases of carcinoma of colon and rectum with a total operability of 84.2 per cent and an operative mortality of 4.2 per cent. Of this number, 107 were admitted to the Johnston-Willis Hospital. Of 65 cases of carcinoma of the colon 49 were operable, 16 inoperable—an operability rate of 75.3 per cent. A primary end-to-end anastomosis was done in 40 of these cases without a single death. A Mikulicz type of exteriorization was carried out in eight cases with two deaths, cause of death in one a pulmonary embolus, in the other septicemia. One patient in this group, aged 83, refused operation. The records of six cases were incomplete and are not included in our following statistical study. The follow-up of

our series will be reported later.

Some type of operative procedure was carried out in 12 of the 16 inoperable cases. In two of these a perforation of the sigmoid occurred at the site of the lesion and death ensued from generalized peritonitis. In six inoperable cases a precolostomy was done. In 13 of the 16 inoperable the lesions were of the left colon; in three the lesions were on the right.

Forty-nine cases of carcinoma of the rectum were seen. Three of this group were inoperable; one refused surgery. Thus more than 90 per cent were found operable in this group. Of these 45 operable cases, 35 had the one-stage abdomino-perineal resection of the rectum. Nine had posterior resections. One patient, aged 83, had a local cauterization of his lesion. The cases that had posterior resections were bad surgical risks, with one exception. This man had a very low lesion. He is living and well after five years. Of the three inoperable cases one had a cecostomy; one, a local cauterization; and on the third no surgical procedure was attempted. There were two operative deaths in this series. Both occurred following abdomino-perineal resection of the rectum. As proved by autopsy the cause of death in one case was generalized peritonitis, following disruption of the wound. This patient had metastasis of the liver. In the second fatal case death followed a massive pulmonary embolism, as proved by autopsy.

#### SUMMARY

We report a series of 114 cases of cancer of the colon and rectum seen in the past eight years. Total operability, 84.2 per cent; total mortality, 4.2 per cent. In our 65 colon cases, operability was 75.3 per cent. There was no mortality following aseptic immediate anastomosis using the Stone clamp in 40 of these cases. Eight Mikulicz-type operations were done with two deaths. In our 49 cases of cancer of the rectum operability was over 90 per cent, mortality 3.5 per cent.

#### CONCLUSION

I advocate one-stage abdomino-perineal resection for lesions of the recto-sigmoid and rectum. Certain advantages stand out in the summary of our cases of cancer of the colon done by the one-stage aseptic anastomosis technique. The radical resection is more completely done. The patient's stay in the hospital is cut in half; this saves the patient money, and saves the hospital bed space. The mental state of these patients is also signally improved by the one-stage operation. No Mikulicz patient is happy with his double-barreled open colostomy, no matter how well it is functioning, or how thorough the explanation of it has been beforehand. Most important of all these advantages, as reported in the literature, the mortality of colon surgery is

reduced by the one-stage, aseptic anastomosis operation. In our series of 40 cases there was no mortality.

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UNILATERAL RENAL DISEASE with hypertension, demonstrated by roentgenography, can be treated by nephrectomy with an expectation of improvement or cure of the associated hypertension in about half of the cases. In the present series of cases, the greatest incidence of favorable results occurred in adult patients with chronic pyelonephritis, hydronephrosis, and calculus pyonephrosis. In that group of cases termed by us "infantile pyelonephritis," the incidence of cure is less than in the adult type. Routine urologic studies in all cases of hypertension, regardless of the high cost entailed, appear to be desirable for the reason that a significant number of gross renal lesions could not otherwise be discovered.—R. M. Nesbit in *The Brooklyn Hospital J.*, Jan.

## Religion and Psychiatry

JOHN R. ERNST, M.D., F.A.P.A., Washington

SIR WILLIAM HAMILTON, astronomer, teacher and metaphysician of the University of Dublin during the early part of the nineteenth century, stated in his lectures on metaphysics: "On earth, there is nothing great but man. In man, there is nothing great but mind." Since then we have learned that mental activity is but one function of the total personality, and that we have a sub-conscious or unconscious mind, an ego or basic personality, and a super-ego or conscience. Most important of all, we have learned that the origin and cause of many of our mental attitudes began in infancy and childhood, becoming part of our basic personality and conscience.

Violating our conscience in any way produces feelings of guilt which may become dangerous emotional conflicts or complexes, resulting in dissociation and disintegration of the personality because our mind or intellect is unable to function in the presence of intense emotion. Psychoanalysis has shown in this way that mind, as mental activity, is not an independent function of the personality, and that emotion is a greater force and governs our conduct to a greater extent than intellect. The emotions of chronic anxiety, depression and fear produce psychosomatic symptoms through the intermediary of man's primitive, autonomic, or vegetative nervous system, which functions independently of his conscious mind. The primitive instinct of self preservation prepares him for combat or flight, but the danger is unknown to his conscious mind or intelligence. His somatic symptoms frighten him and increase his fear, which in turn aggravates his symptoms, thereby producing a vicious circle, as fear feeds on fear.

Fear of the unknown, because of lack of insight, is the cause of this chain reaction, which eventually produces panic states, attacks of amnesia, neurosis, psychosis or suicide, as the personality disintegrates under the unbearable strain. This is especially true in the immature, adolescent and insecure personality. The alcoholics and drug addicts are the result of these unconscious conflicts.

Persons with emotional problems often consult a clergyman for advice because of guilt feelings and inability to resolve conflicts between their primitive impulses and their religion or conscience. They could be helped more if the clergymen were able to recognize potentially serious personality disorders before a neurosis or psychosis developed. It is important that more attention be given to training theological students, and those now in the

ministry, through psychiatric lectures and practical experience in institutions for mental disease. To qualify for this training it is necessary to have wholesomely interpretative insight into human nature, with entire freedom from prejudice, punitive attitudes, intolerance, and an earnest desire to assist the patient to readjust so as to regain his peace of mind, without which normal living and happiness are impossible. A condemning attitude on the part of the clergyman or psychiatrist may well be the precipitating factor in a psychosis or suicide.

The understanding clergyman tries to discover and correct the cause of the mental conflict, rather than confine his help to purely spiritual considerations. He realizes that he must consider the total personality if he is going to be able to give constructive advice. In other words, the spiritual and physical are interdependent and inseparable, and peace of mind or spiritual harmony will depend upon harmony between the physical man and his conscience. To help the maladjusted personality requires a knowledge of at least the basic principles of psychoanalysis. Religion can be a powerful force for mental health, if taught and administered by emotionally mature and well adjusted individuals, who have a working knowledge of the psychodynamics of the psychoneuroses and psychoses.

A majority of those who consult a clergyman, or psychiatrist, are of the schizoid personality type, whose characteristics are emotional and psychosexual immaturity which produce sex conflicts, with profound feelings of guilt. Theological students and chaplains who have had training in mental institutions have found that a large number of patients suffer from excessive feelings of guilt, usually because of basic and deep-seated conflicts between instinctive or primitive drives and the conscience or super-ego, which is largely an acquired censor. It is well known that consciences differ greatly in elasticity, and that this depends upon differences in religious and moral teaching during the formative and plastic years of the ego or personality. It is also well known that if you train a child in the way you would have him go, he is not likely to depart from it, even though a neurosis, a psychosis, or suicide may be the end result. The Oedipus situations, or morbid family attachments, are conspicuous examples of "education for death."

The clergyman must learn, as the psychoanalyst has been compelled to learn through overwhelming proof since the introduction of psychoanalysis some fifty years ago, that one of the first principles of

successful psychoanalysis is to recognize that the sexual or reproductive instinct is one of the most constructive forces of the personality, but may become the most insidiously and irresistibly destructive, if perverted or unconditionally repressed.

One of the most important benefits derived from psychoanalysis is that better understanding of the underlying causes of good and bad behavior has been of great help to teachers, social workers and courts. The clergyman is often in a far better position to help these maladjusted people than is any other person or agency, but he is greatly handicapped because he is not psychoanalytically oriented; and is preoccupied with religious, spiritual and ideal considerations in a severely realistic and practical world. Perhaps his greatest handicap is that he believes man should be held responsible for all of his acts, even though the motivation originated in the unconscious, an origin of which neither the offender nor the minister is at all aware. It is axiomatic in psychoanalysis that when a neurosis develops the patient is not consciously aware of its underlying causes.

Uncovering certain conflicts which are basic in the neuroses is common procedure in psychoanalysis, which postulates the existence of an innate psychosexual predisposition, which, if it comes into conflict with the environment during the developmental age, or later in life, gives rise to neurotic reactions and mental illness. Persistent "infantile trends and abnormal psychosexual development are characteristic of the neurotic. In general he is sensitive, self-centered, given to phantasy, attached to the family, suggestible, emotionally unstable, insecure, inadequate, immature, and apparently incapable of adjusting to life on an adult level. His sex impulses are infantile and fixed at levels to which he regresses when adjustment to life, or reality, becomes difficult or impossible. The neurosis and psychosis are the result of failure, or inability to solve inner conflicts between the super-ego or conscience, and the unconscious drives, which are primitive or instinctive and as old as the human race.

In other words, the neurotic is sick because his conscience frustrates the instinctive drives of the unconscious, resulting in an attitude of defeat and hopelessness, with regression of the personality and the substitution of phantasy and day-dreaming for reality. This schizophrenic attitude precedes psychosis. Psychoanalytic research has shown that the religious life, in many ways, represents a dramatization on a higher plane of the emotions, fears and longings of the child in relation to his parents. It represents an unconscious wish to return to the love, safety and dependence of childhood.

The therapist, whether clergyman or psychiatrist, must take an active part in directing the ego toward more mature attitudes when dealing with

external pressures and the infantile wishes. The neurotic must be taught the use of his integrative powers in establishing a rational conscious personality, which will enable him to cope with his life situation in an adult and effective manner. The psychiatrically trained clergyman has an exceptional opportunity to prevent neurosis, psychosis or suicide, if he realizes that the separation of mind from the total personality is a fundamental and basic error of religion that has resulted in conflicts within the personality by operating through a sense of guilt with need for punishment, or atonement, which is basic in our religion. If the patient has the capacity to learn the simple dynamics of the human personality when presented in simple, non-technical language, it will be possible to lessen the feelings of guilt through insight and a non-condemning attitude. Psychoanalysis, which is both a science and an art, is the most thorough and efficient of all methods of treatment when applied to properly selected patients. It also lends itself to considerable modification in its application to different individuals, and is the only method that is capable of dealing with fundamentals or the actual causes of the maladjusted personality.

During the past thirty-three years I have been actively interested in the progress of psychoanalysis. It has had a difficult road to travel because of ignorance, intolerance and superstition. Its continued advancement will depend upon the energy and determination of those of us now in that field, as well as the acceptance and adoption of its principles by the whole field of medicine, religion and the general public, whose continued interest and support will depend upon how helpful it can be in a practical way. Only as the individual becomes familiar with the principles of mental health can he apply them to himself, his family and his business. Religion and psychoanalysis complement each other. The psychoanalyst always has been aware that his specialty is closely associated and involved with religion, which is an integral part of all personalities, and it is largely responsible for the conscience or super-ego, without which certain feelings of guilt would not be experienced.

The incest barrier seems to be an exception, as it is not acquired through religion. It is considered an important cause of neurosis and psychosis, as it involves morbid and abnormal family attachments occurring in predisposed children. If it is recognized early and proper treatment be given, personality maladjustment of a serious nature will, in many instances, be prevented. The public's interest in psychoanalysis has always exceeded that of the clergyman, or even the average physician, who has been waiting for a larger acceptance and greater tolerance of its underlying principles by the medical profession as a whole. The psychoanalysts are not entirely blameless for this lack of

understanding. There has always been the orthodox analyst, who adhered strictly to the original method of Freud with a fanatical loyalty.

This method requires a couch, word-association and other tests, as well as detailed study and analysis of dreams. To these he would probably add the Rorschach test. Those who had more thorough training in psychiatry, through institutional experience with the end results of mental disease, were able to understand the underlying personality conflicts of the patient without resorting to all these diagnostic aids, thereby saving much time, and decreasing the expense to the patient, always an important factor. This so-called brief or modified form of psychoanalysis has gradually gained in popularity among the more experienced psychoanalysts; who have found it very successful with patients, who, even though unstable, have been able to maintain a reasonably efficient social and industrial adjustment, but are thrown off balance by some unusually severe psychic trauma. Because a maladjusted personality, and the probable cause, will become apparent almost at once to the experienced analyst, it is not necessary to use the time-consuming methods of the orthodox analyst in order to make a diagnosis and outline a plan of treatment. We have also learned that after years of a certain pattern of behavior, the habits thus formed can be modified only to a moderate degree. In the young patient, whose ego is more plastic, greater success is achieved in the reorientation of his total personality.

The Chicago Institute for Psychoanalysis, in a recent publication by Alexander and French entitled *Psychoanalytic Therapy*, has been very successful in the use of this shorter method of analysis in selected cases. The lack of support or approval of psychoanalysis by many is due, to a large extent, to the failure of psychoanalysts to present a united front, because of their inability to agree or unwillingness to admit that psychotherapy — whether orthodox psychoanalysis or some modified form of analysis—could be effective. Dissension within the ranks has not increased the confidence of the public or the medical profession in psychoanalysis.

Just as in other medical specialties, speed is essential in order to enable a few men to treat many patients. The psychoanalyst of today cannot spend months or years psychoanalysing his patients, or act in a parental role indefinitely. It is therefore necessary for us to be prepared to use a modified form of analysis, which also should be stressed in any training program for psychoanalysts and others. The military psychiatrists have amply demonstrated that this method is very effective in the majority of their patients. Because of the inadequate number of physicians trained in psychoanalysis, and the importance of early recognition of the

potential psychoneurotic or psychotic, the clergymen, the social worker and others, after certain basic psychoanalytic training, are in an exceptional position to help the maladjusted who consult them, before it is too late. The importance of religion, an instinctive need of all people, would be greatly increased if it taught men and women how to be happy, though human.

—1835 Eye St., N. W.

#### PRESIDENT'S ADDRESS

From P. 65

latent effects of estrogenic hormones in higher mammalia, and until we do, vigilance is in order.

I would like to acknowledge assistance given me by Doctor W. R. Bond of Van Pelt and Brown, The Schering Corporation, The Morton Manufacturing Company of Lynchburg, and the W. F. Prior Company, in obtaining the data upon which this paper is based.

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#### CAUDAL ANALGESIA—From P. 68

and certain vitamin substances will take care of most of the postpartum hemorrhage threat. For two years now I have not had to use plasma—and I make plasma in my own laboratory—because I have been keeping the blood rich enough in red cells and hemoglobin.

Whatever type of anesthesia you use, great care is required, or you will have morbidities and mortalities. Hyoscine and morphine, I am convinced, offer the best and safest means of making delivery almost if not altogether painless. It doesn't affect the mother or baby—hyoscine and morphine in proper doses. By slowing up natural uterine contraction, you will have less laceration of the cervix method than probably any other possible. A few drops of ether may well be given over the second stage and you can deliver a patient with less damage to the birth canal and repair the birth canal and discharge the patient at the end of six weeks in every way whole. There is very little danger to the drop method of giving ether. Spinal anesthesia is very good. Caudal anesthesia is very good. But this method I have outlined doesn't consume half your time, doesn't endanger your patient, you are not failure. There are certain respiratory conditions which make gas and oxygen preferable to caudal anesthesia or low spinal anesthesia for ether.

DR. K. E. NEESE (closing): I appreciate Dr. Langston's discussion. I feel about morphine pretty much as he feels about pituitrin. I don't believe it should ever be given before the birth of a baby.

The only way, as I stated in the beginning, that caudal analgesia can have anything to do with control of hemorrhage is by preventing the relaxation of the postpartum uterus. Of course this would be encouraged by the use of any of the drugs, such as nembutal or morphine or hyoscine, but I don't think such an effect could be produced by caudal analgesia.

I appreciate the doctor's remarks.

# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### THE REVOLUTION IN MEDICINE

THREE OR FOUR YEARS AGO the J. B. Lippincott Company brought forth a manual from the pen of Dr. Tracy J. Putnam, of New York, whose thinking is always comprehensive and clear and whose writing is understandable and informative. The manual is intended principally for those individuals who have recurrent convulsions and for their relatives and their friends.

It is both unpleasant and perturbing for a layman even to look upon one in the throes of a physical convulsion accompanied by loss of consciousness. The realization that one is subject to such seizures is at least disquieting. Not always, but generally, perhaps, physical convulsions with associated interruptions of consciousness constitute the dramatic manifestation of the epileptic condition.

The purpose of Dr. Putnam is to pour oil upon the troubled waters, and to keep alive a cheerful degree of hope in those individuals afflicted by seizures and in their relatives and their friends. Dr. Putnam would, if possible, have the seizures abolished; if that should be impossible, he would hope to make their recurrences infrequent.

Throughout the long history of medicine the physical convulsion has traditionally been looked upon by physician and by layman as an ominous event. Two features of the seizure arouse instant concern: What is the cause of the convulsion? Will the individual survive the seizure?

I have no doubt that thirty or forty years ago the physician would have been charged with criminal practice if it could have been proved that he induced a convulsion in his patient. But today one may read in the most reputable medical journals advocacy of the induced generalized convulsion as a method of treatment of many different forms of mental disease—including, of course, alcoholism and drug addiction. All those forms of treatment in which the generalized convulsion is the prominent feature are referred to as shock therapy. The seizure, with associated unconsciousness, may be induced chemically, by an overdose of a reputable drug; or the convulsion may be caused by the controlled electric current.

The beneficial effect of physical injury, or unexpected shock upon the mentally sick person, has long been known. Dr. Benjamin Rush, of Philadelphia, the most distinguished medical man of the Revolutionary War period, and the father of Amer-

ican psychiatry, sometimes "shocked" some of his mental patients back into their right minds. And sudden and pronounced shock, physical or mental, has long been known to bring a so-called insane person suddenly back to mental normality. Once I knew a man in early mid-life to suffer the loss of an eye by rupture of the ball in an accidental fall. He was a pronounced epileptic, but there were no more seizures after the loss of the eye.

Radical and revolutionary changes in therapy are taking place in the treatment of most diseases—of the skin and of most of the tissues encompassed by it. Lately the dermatologist to whom I referred an "itching" friend told me the itching was caused by scabies. He remarked that a couple of applications would cure the condition. New remedial agencies are being derived from such unexpected sources that it is difficult at times for the physician to have respect for them. But all anchors are now lifted, all philosophies are being reexamined, and it behooves the medical man to be neither derisive nor gullible. Two of the most abundant substances in nature are salt and iron. But they are not worthless because they are abundant; they are, indeed, vital substances in every human body. The malaria parasite may or may not have been the agency that brought to a low level the great Greek and the great Roman civilization, but throughout the ages malaria has afflicted and cursed mankind. Yet an induced malarial infection may recover man from general paresis, one of the worst forms of chronic syphilis.

No other professional man is so frequently called upon to examine and to reexamine the fundamental features of his philosophy as the doctor of medicine. It may be necessary tomorrow for him to abandon a belief of his profession of many years' standing; and on the next day he may be called upon to make use of a new therapy for which he can have little respect because of its origin.

To believe or not to believe; to use or not to use the new therapy—well equilibrated, indeed, must be the medical man whose judgment is generally sound.

### MIGRAINE HEADACHE: TREATMENT OF FIFTY-ONE PATIENTS WITH DIHYDROERGOTAMINE

(L. S. Blumenthal & Barara Fakler, Washington, in *Med. An. D. C.*, Jan.)

Ergotamine tartrate is considered to be the best agent we now have generally available for the treatment of acute attacks of migraine headache. We are fortunate in now having *dihydroergotamine*, which is as effective as ergotamine tartrate and much less toxic.

Fifty-one patients have been treated with the new drug during 266 acute attacks of typical migraine headache: 80% of the patients obtained excellent results, 8% good results, and 12% poor results.

Side effects reported by 13 patients consisted in burning at the site of injections, pain or drawing sensation in the legs, burning of the scalp; nausea, vomiting, abdominal



distress, malaise, and dullness of the head. In no case was it considered advisable to forego treatment with the drug because of toxicity, nor did any patient request discontinuation of its use because of uncomfortable reactions.

It is concluded that the new preparation, dihydroergotamine, is the drug of choice for the treatment of acute attacks of migraine headache.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### PEDIATRIC PROBLEMS OF THE GENERAL PRACTITIONER

A PROVIDENCE pediatrician of rich and long experience with the problems of practice in his field of medicine, has written<sup>1</sup> an abstract of great helpfulness, which is freely abstracted for the good of our patients and ourselves.

The mother who suffered the pain of labor perhaps was more appreciative of her infant because of the difficulties of her labor. Today the mother has a painless labor and is divorced from her baby during its stay in the hospital, and today more than half of our women never nurse their babies.

There are still physicians who believe that breast feeding is the correct way to feed a baby and that bottle feeding is the wrong way. There are obstetricians who believe that breast feeding hastens the convalescence of the mother and fosters a more stable nervous system in the post partum months. There are surgeons who state that cancer of the breast later in life is more common in women who do not nurse their infants than in those who do even for only a short period. On the other hand there are men who think that should there be a definite history of cancer in the family the mother should not feed her child at her breast.

If the infant has been referred by a physician for advice, such advice should be given and the baby returned to the original physician.

In all cases which have been under the care of other physicians the pediatrician should make an attempt to continue the formula given by the other physician with the least modification. A little later modification can be done without causing the mother to believe the baby had been wrongly fed up to this time.

The annual examination should be of all organs. The child should be weighed and measured. Especial attention should be given the teeth and feet. The urine should be tested. A patch tuberculin test should be done; if positive an x-ray of the chest. The physician should acquaint himself with the quality of the family milk supply, and make sure that all food elements are being given. All children should have vitamin D preferably in the form of pure cod liver oil. All other vitamins should be provided in the food.

1. H. E. Utter, Providence, in *R. I. Med. J.*, Feb.

Tonsil tissue is a part of the lymphatic or filter system of the body. The tonsil of the child digests bacteria which gain access to the throat. In the fall, when respiratory disease is prevalent, routine examination of the throat will often reveal large, red and swollen tonsils when the child has no manifestation of illness. Only when a child comes in contact with an overwhelming number of bacteria does the child become ill. Is this illness any more than a result of the body calling upon other defensive measures such as fever and an increase in the leucocytes?

One attack or more of uncomplicated tonsillitis is no positive indication for tonsillectomy if the tonsil quickly returns to normal. The physician who hears a cardiac murmur while the child is ill should not reveal his discovery to the parent. Persistence of the murmur after the subsidence of the fever should prompt the physician to tell the parent. Many of these children fall into the hands of the pediatrician for confirmation and he finds no murmur after the attack of fever.

Utter does not believe that all tonsils should be removed. He does believe that evil may result from their removal.

Tonsillectomy should be postponed until the child has passed the age of four if possible and the later the operative date the more permanent the result. Removal of the tonsil of young children is nearly always followed by lymphoid hyperplasia in the pharynx and tonsillar fossae. This tissue becomes infected and is responsible in a large measure for the intractable night coughs which are so disturbing. Early tonsillectomy in the allergic child is often followed by attacks of asthma, usually precipitated by a acute upper respiratory infection. Children whose tonsils have been removed are more susceptible to sinusitis and bronchitis. Deafness is more common in the child whose adenoids have been removed. This may be due to the fact that new lymphoid tissue encroaches upon the orifice of the Eustachian tube. Occasionally too vigorous use of the adenoid curette destroys the mucous membrane at the tubal orifice.

A night cough which disturbs the sleep of the whole family is ominous in the mind of the layman. The allergic child is much more susceptible to infection than the non-allergic. Scratch tests are simple and in the majority of cases only the commoner allergens need be used. If we will devote our attention to the treatment of the site of infection, we will have a less frequent change of physicians.

If we would use the sulfonamides in proportion to the severity of the symptoms, we would have better results and few reactions. Children tolerate the drugs better than do adults. If we start the drugs at the onset of an acute infection we will

have a minimum of complications. We may encounter a simple catarrhal otitis or cervical adenitis but seldom will either go on to suppuration as in the preschool days. In severe respiratory disease sulfa drugs and penicillin should be prescribed conjointly.

During the first year of life the average child eats more food than during the second and third years. Teething or an illness in the second year may be responsible for the anorexia because the child is forced during an illness and the loss of appetite persists after the tooth has erupted or the illness has passed.

The parent is never satisfied to be told that the child will eat when it is hungry. Small quantities of definite types of food should be prescribed. Increased only when the child requests an increase. The child must be compelled by its hunger to ask for food.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### PSYCHIC FACTORS IN THE DEVELOPMENT AND TREATMENT OF OBESITY

FREED<sup>1</sup> emphasizes the psychic factors in the causation of obesity.

He reminds that it is essential to determine any organic change which might cause increased irritability or nervous tension. Simple anemia, arthritis, premenstrual tension, menopause and post-operative asthenia may, any one of them, result in overeating. If the nervous irritability is of a temporary nature, for example, the worry over a child's illness, unpleasantness at work, or a domestic rift, sedation with a barbiturate compound is helpful. The physician can often determine the cause and explain to the patients the reasons for their excessive desire for food, thereby aiding them greatly in their efforts to combat this reaction. While such studies are being made and treatment is being instituted for the various disturbances which may be found, have these patients start immediately on their reduction diet.

The diet should be a well balanced one of 800 to 1,100 calories. *The drug of choice* to suppress their desire for food is *amphetamine sulfate*, 5 mg. t. i. d. 30 to 60 minutes before each meal. Occasionally a patient will require 10 mg. at one or more times during the day. Only rarely does amphetamine fail to curb the appetite, except in those whose drive for food is overpowering and who probably require fundamental psychotherapy, or in patients who resist subconsciously any suppression of the appetite because of the great pleasure derived from eating, even though they may

consciously express a desire to have the appetite curbed.

With the administration of amphetamine, reduction in weight may be promptly started, and while this is going on, other measures may be sought and administered to aid in giving the patient a sense of well-being. It is this feeling of well-being which reduces the psychic tension and thus combats the increased desire for food. Thus, such forms of therapy as iron in cases of anemia, estrogens for the menopause, androgens or ammonium chloride for premenstrual tension, barbiturate drugs for nervousness and thyroid for those patients with a deficiency of this glandular substance are all very helpful.

There is little evidence that obesity is a glandular or metabolic disturbance. The psychologic factors in obesity are paramount. Since the tendency to overeat is a strong drive for oral gratification, any condition which increases the nervous or psychic tension of the person will cause an aggravation of this tendency. The possibility of harm from the use of benzedrine sulfate is insignificant. Thyroid therapy in most cases is of little value. The ideal treatment of obesity involves education of the patients to the use of proper eating habits for their children and other psychologic training which induces a satisfactory adjustment to life through emotional maturity.

Few of us will be able to accept Freed's ideas unreservedly; but most of us will give the recommendations based on these ideas a try-out. Our present methods of attempting to reduce our overweight patients result so poorly that most of us will welcome any management that promises good results, and which appears to be certainly harmless.

#### POISON IVY DERMATITIS

(F. G. Witherspoon, Nashville, in *Jl. Tenn. State Med. Assn.*, Jan.)

In the summer of 1946 a new preparation was used on 70 patients who reported to the out-patient clinic with this condition.

Rx Phenol (or menthol) .....	1%
Sodium perborate .....	10%
*Emulsion base .....	q.s.

Sig. Apply to affected areas every two hours

\*A greaseless cream, by Burroughs-Wellcome Co.

The main usefulness of this ointment is in acute cases with a limited involvement. With those patients who have large bullae present, and a widespread distribution of lesions, it is found to be more effective to alternate ice bags and 1% sodium perborate compresses for a day or two, and then apply the new cream.

The patient may remain on duty, applying the preparation every two hours, with soothing and rapid involutions of the lesions. The ointment is non-greasy, non-staining and has a pleasant odor.

When sodium perborate becomes moist, hydrogen peroxide is formed, with the resulting release of nascent oxygen. The effectiveness of the preparation is lost in five to seven days. As the oxygen is released the volume of the prepara-

1. S. C. Freed, San Francisco, in *Jl. A. M. A.*, Feb. 8th.

## PEDIATRICS

### ENDOCRINE PROBLEMS FROM THE PEDIATRIST'S VIEWPOINT

MUCH of what is appearing in the medical press on endocrine disorders is the product of more zeal than discretion in a good cause. Hansen<sup>1</sup> presents the essentials of this problem, of so much practical importance to us all, in a conservative and helpful manner.

Disorders of the *thyroid gland* are encountered frequently. Most of the cretinism is lack of thyroid gland. Severe myxedema is readily recognizable, the mild forms often difficult to diagnose. Physicians should evaluate the results of a therapeutic test before parents are told that the disease is due to a lack of the thyroid gland substance. Of particular interest is the type wherein the adolescent girl takes on a little excess weight, slows up in mental processes, has emotional disturbances and oftentimes movements like those of chorea. Very encouraging is the low basal metabolic rate in response to the administration of thyroid substance.

Five to 10 per cent of all Graves' disease is in childhood, usually after 10 years. Of nonendocrine problems thyroid goiter is the most common; neoplasms, anomalies and cysts occur.

Tetany is dysfunction of the *parathyroid glands* and may be cause of convulsive seizures. The diagnosis of hypofunction is substantiated by finding a low serum calcium. Hyperfunction is rare, but causes bone cysts or osteoporosis, especially in the asthenic child not of average height. The determination of calcium in the urine is useful for recognition.

In diabetes of childhood a well-balanced diet is essential to promote growth and health. Hyperinsulinism will not be seen often. The possibility of a hyperplasia, adenoma or even malignant tumor of the pancreas must not be forgotten as an occasional cause for convulsive seizures. A fasting blood sugar determination, and preferably a glucose tolerance curve, should be included as routine procedures in any work-up of the convulsive patient. Cystic fibrosis of the pancreas must be frequently kept in mind whenever one encounters the small, poorly-developed infant who is not growing as would be expected on the basis of its food intake. The diagnosis can be confirmed readily by simple tests.

As to the *thymus gland* nothing of significance is known about its function. Few observers now believe that sudden death in infants can be explained on the basis of an enlarged thymus.

There is no real information in regard to either

hypofunction or hyperfunction of the *pineal gland*.

Hypofunction of the *anterior lobe of the pituitary* may be manifested as cachexia, known as Simmonds' disease (infrequent). It must be differentiated from anorexia nervosa. Dwarfism can be caused by hypofunction of the pituitary. When the diagnosis is made before the epiphyses have closed, administration of the growth-hormone preparations, or methyl testosterone, may be beneficial. Progeria is quite rare, but the picture of premature senility is dramatic and a girl of 14 or 15 may appear as though she were 65 and have the arterial hardening and other features of that age.

Frölich's syndrome, in which obesity is combined with immature sexual development, is believed to be due primarily to a lesion in the hypothalamus. Fortunately, the obesity can be controlled by dietary regulation, and often the sexual development will be found not to be as seriously limited as had been suspected. Other lesions of the central nervous system which can produce a hypofunction of the anterior lobe are tumors or inflammatory conditions in or about the hypothalamus.

Gigantism is due to an overproduction of growth hormone by *acidophilic* tumors which are exerting an influence before the epiphyses have closed. Administration of gonadotropic hormone may speed up the process of maturation so that height will not become too abnormal. Cushing's syndrome is rare and affects chiefly females. It is due to a *basophilic* tumor producing virilism, but recent work shows that adrenal cortex tumors also can be responsible for this syndrome. The milder degrees of hirsutism, sometimes exhibited by older girls, may be due entirely to adrenal cortex malfunction rather than to disorders of the basophilic cells of the hypophysis.

The only disturbance of pediatric significance due to the *posterior lobe* of the pituitary gland is diabetes insipidus. This can be caused by hypofunction of the posterior lobe *per se*, but more often is due to a lesion in the hypothalamus or the connecting nerve pathways.

Hypofunction of the *testes* may vary from the complete form to the various subtypes. A history of an infectious process often is obtained and, prepubertal, may be responsible. The comparable hypofunction in girls, producing infantilism, is usually due to congenital absence or is secondary to cystic degeneration of the ovaries. Lesser degrees of hypofunction must be evaluated critically. No attempt should be made to reach a positive diagnosis until the girl is at least 15 years of age. The cyclic use of gonadotropic hormone is very beneficial in correcting such hypofunction.

Gynecomastia may be due to testicular tumors, or tumors of the adrenal cortex, but the common form seen at adolescence is of no special signifi-

1. A. E. Hansen, Galveston, in *Jl. Mo. Med. Assn.*, Feb.

cance and undergoes spontaneous regression.

Sexual precocity is more apt to occur in girls than boys when its etiology lies in the sex glands. Granulosa-cell tumors offer a good prognosis if surgical removal is prompt. Differential diagnoses to be considered are: 1) increased gonadotropic hormone, secreted by the pituitary under the influence of a hypothalamic lesion; and 2) the rare syndrome of osteodystrophia fibrosa, in which sexual precocity in girls is linked with unilateral bone lesions and increased pigmentation of extremities. In boys differential diagnoses must include: 1) hyperplasia and tumors of the testes; 2) hypothalamic lesions; 3) macrogenitosomia praecox of mid-brain origin; 4) adrenal rests, and 5) androgenic or interrenal tumors of the adrenal cortex. When no correctible pathologic lesions can be discovered for the precocity give as much growth stimulation as possible, through the use of pituitary hormone, although these children are already tall for their ages. Precocious puberty brings early closure of the epiphyses and thus limits the period wherein growth is possible.

Dysfunction of the *adrenal glands* may be quite complex. As with the hypophysis, a hypofunction can coexist with a hyperfunction, or can succeed it. Diagnosis may be difficult. Detailed history; careful examination; roentgenograms, after perirenal injection of air, for visulization of the adrenals; pyelograms; skull plates to the long bones, to determine bone age and possible metastases; blood levels of electrolytes and mitrogenous metabolites; and the urinary excretion of steroid hormones and glucose—all these determinations may be required.

Hypofunction of the adrenal medulla is unrecognized as a clinical entity. Hyperfunction is rare in children, but a chromaffinoma may be responsible for intermittent attacks of hypertension. Any medullary tumor may have a secondary effect upon cortical function.

Hypofunction of the cortex may be the dramatic emergency of a Waterhouse-Friedrichsen syndrome or may be manifest as either the chronic form or a crisis of Addison's disease.

Hyperfunction of the adrenal cortex may be from two sources. If hyperplasia or neoplasm of the androgenic cells occur, boys undergo precocious puberty and girls exhibit virilism. Hyperfunction of the interrenal cortical elements will lead to Cushing's syndrome. Differentiation must be made from pituitary basophilism and adrenal rests. Urinary excretion of 17-ketosteroids (alpha and beta) is increased with hyperfunction of the adrenal cortex, and can be used to differentiate between neoplasms in which the beta forms predominate, in contrast to hyperplasias which produce more of the alpha form.

## PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor, Greenville, N. C.*

### BRUCELLOSIS AT THE STATE OF WISCONSIN GENERAL HOSPITAL

SOME excitable doctors say brucellosis is one of the greatest of our health problems. In a large general hospital only 53 cases were diagnosed in 15 years.<sup>1</sup>

Since 1930 there have been observed at the State of Wisconsin General Hospital, Madison, 53 cases of brucellosis. Criteria for inclusion of cases in this series were a suggestive history and physical examination, plus one or more confirmatory laboratory tests.

#### *Criteria for Diagnosis*

Suggestive history and physical examination....	53	out of 53
Positive blood agglutinations (1 to 80 or more) .....	49	" " 53
Positive brucellergen skin tests.....	18	" " 18
Positive opsonocytophagic index.....	10	" " 10
Positive blood culture .....	4	" " 29

Males predominated in the ration of 39:14.

All of these patients had had fever, and all complained of weakness; 44 had had upper respiratory symptoms; 40, chills; 40, weight loss (ave. 21 pounds); 39, muscle or joint pains; 36, drenching night sweats; 33, headaches; 31, gastrointestinal complaints; 27, severe anorexia (22 of these with weight loss of eight to 40 pounds).

In order of the frequency of their employment, eight modes of treatment are listed, with some indication as to the phase of the disease treated (acute or chronic), and the severity of the febrile reaction during the patient's hospital stay.

There has been no satisfactory follow-up.

#### Therapy

Symptomatic .....	25	4	25	4	8	13
Sulfonamide .....	10	8	6	3	4	3
Vaccine .....	10	6	8	6	2	2
Neosarsphenamine (1934-35) .....	3	2	2	1	1	1
Killed typhoid I.V. ...	3	3	2	3	0	0
Quinine (1931-32) ..	3	3	0	0	3	0
Peptone I.V. (1932) ..	2	2	1	1	0	1
Penicillin and methionine .....	2	2	2*	2	0	0

Laboratory investigation appeared to refute the contention that a characteristic blood picture accompanies brucellosis.

1. E. B. Cohen, Madison, in *Wisc. Med. J.*, Sept.

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## SURGERY

JOHN W. DEVINE, JR., M.D., *Editor*, Lynchburg, Va.

### DISLOCATIONS

DISLOCATIONS, we are told,<sup>1</sup> are many times more serious than fractures, a fact often overlooked. For a joint to be dislocated, the ligament and the capsule must be torn and stretched. Articular surfaces are often injured; in many cases fractures also occur, and may be complicated by periosteal and periarticular damage. Tension and stress are placed on nerves and blood vessels, aggravated many times by strong muscle spasm, which is nature's means of immobilizing the injured part.

Following are the principles laid down for the treatment of all dislocations: the injured joint should be treated with the utmost gentleness; the exact degree of function of the nerves and blood vessels distal to the dislocation should be determined; before any manipulation a roentgenogram should be made to determine whether or not a fracture exists, and after reduction to determine if fracture is in position. All attempts at reduction of dislocations should be made with the patient under general anesthesia. Local and nerve blocks have been successful only in isolated cases.

If initial dislocation of the shoulder is properly treated recurrent dislocations will be rare. The Kocher method of reduction, or traction, supplemented by gently lifting the head into the glenoid without pressure on the nerves, or the blood vessels, offers the best method of reduction, under general anesthesia. The shoulder should be immobilized in a plaster Velpau cast, care being taken that the skin surfaces do not come in contact with each other; this cast should be worn for six weeks.

Every now and then one is unable to reduce an anterior dislocation because the long head of the biceps is separated from the interbicipital groove, forming a tight band over the glenoid fossa. One should keep this in mind when unsuccessful in reducing a dislocation of the shoulder, and if this is found to be the case an early operation should be performed.

Posterior dislocations of the shoulder are treated similarly, but never by a plaster Velpau cast, as it pushes the head posteriorly, and so tends to produce redislocation. Immobilization should be along-side of the body with the elbow flexed at a right angle.

A paragraph especially worthy of attention is this:

J. J. Callahan, Chicago, in *Jl. A. M. A.*, Oct. 26th.

The most common nerve injury associated with dislocation is of the ulnar nerve. Such injuries are

usually permanent, regardless of the type of treatment. On the initial inspection of a dislocation, the circulation and the nerve supply should be investigated, as this information is important should complications occur.

Since all elbow dislocations occur in hyperextension, the reduction must be in flexion; lateral or medial dislocations cannot be reduced as such without causing increased trauma and possibly a fracture of the articular surface. If the elbow is *medially* or *laterally* displaced, and if one then manipulates so as to cause a true *posterior* dislocation, with the elbow flexed and the manipulator's two thumbs on the olecranon process and the fingers on the anterior portion of the upper arm, the forearm can be waved so as to cause acute flexion rotating the olecranon around the lower end of the humerus. The elbow should be immobilized at right angles with supination of the forearm for four to six weeks.

Complications are calcification of the lateral ligaments of the joint, myositis ossificans, and periarticular adhesions and arthritis. Myositis ossificans is a serious complication, and the patients should be warned that after a dislocation of the elbow some degree of it will most likely occur. The calcification limits the amount of flexion and extension of the elbow joint, and if early surgical treatment is attempted, it will recur. Wait for nine months until full bone repair has taken place and then resect the bone; in 50 per cent of the cases ossification returns and limits the ultimate function of the elbow.

Anterior dislocations of the hip are rare. They are possible only on infliction of severe trauma, and frequently pathologic conditions severe enough to cause death. Posterior dislocations are common and occur with or without a fracture of the head or acetabulum. Regardless of whether there is a fracture of the head or acetabulum, dislocation should be reduced as early as possible. If the fragment is large, an open reduction and internal fixation of the fragment may be necessary.

The Kocher method is an excellent one, but entails great lifting in order to reduce. The old Stimson method is too much forgotten. The patient is placed face down, the leg hangs over the side of the table, and then by manipulation reduction is accomplished, then immobilization by a unilateral or a bilateral spica cast with slight abduction for four to six weeks. In cases of fracture of the acetabulum with the dislocation, the patient should not be permitted to bear weight for at least six to 12 months, but should be protected with an ischial non-weight-bearing caliper or brace.

The complication after dislocations of the hip is usually calcification of the capsule with limita-

tions of motion, usually noticed in third or fourth year. In 95% of the cases of dislocation of the hip complicated by fractures, either aseptic necrosis or traumatic arthritis develops, which eventually results in much disability of the hip joint.

In order that dislocation of the knee may occur the cruciate ligament must be torn and the lateral ligament either torn or stretched, and frequently the internal and/or the external cartilages are injured. In many cases there is complete loss of circulation to the extremity, which, on investigation, is found to be due not to a rupture of the popliteal vessel but to a segmental spasm of the artery.

Traction with 10° of flexion of the knee, corrects adequately the great majority of cases of this dislocation. With proper immobilization, and that means at least 12 weeks in a plaster cast followed by a brace for from four to six weeks, a goodly percentage of these patients will respond to treatment without surgical intervention. There are some conditions, however, that will not respond to conservative treatment, and various operations for stabilization of the knee joint are necessary.

It will be well for all of us to tell our patients who think lightly of a joint being out of place that this Chicago teacher of surgery says dislocations are much more serious injuries than fractures. And we all know that many injuries are a combination of the two.

Callahan's remarks on the frequency of permanent limitation of motion following dislocations, no matter how skilled the treatment, the general practitioner especially should take to heart and remember against complaints of a disappointed patient, in or out of court.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### PSYCHIATRIC DISEASE AMENABLE TO CARE IN A GENERAL HOSPITAL

Throughout the country state hospitals, endowed and private institutions are overcrowded. The outpatient departments for the psychoneuroses, psychosomatic conditions and for the organic diseases complicated by neuroses are not equipped to take care of their patients. There are too few psychiatrists to care for the patients in the state hospitals, the general hospitals, outpatient departments, and in office practice.

Psychiatry now means more than caring for the insane. It has a larger implication and its interests permeate every branch of medicine and surgery.

The idea of psychotic patients being housed in a general hospital is not a new one. The Penn-

sylvania Hospital, at the request of Benjamin Franklin to the General Assembly of Pennsylvania, established a department for the psychotic patients in 1751 and a similar department was established in the New York Hospital in 1808. However, it was not until this century that psychiatric departments were established in various communities.

There are excellent psychiatric departments in several of the hospitals in New York, Chicago, Detroit, and especially in small hospitals throughout the Middle West. A good many of these hospitals have excellent outpatient departments where thousands of borderline mental cases, psychoneurotics, and patients with organic conditions complicated by neuroses are cared for. The time has come when psychiatry must be considered as a necessary part of a good general hospital.

When a psychiatric department is a part of most general hospitals, there will be less resistance to seeking psychiatric aid in the early stages of illness or maladjustment, and there will be a greater acceptance of psychiatric aid by the public. There will be less hesitancy in accepting psychiatric consultations regarding various problems and a great deal of illness and unhappiness will thus be obviated.

The psychoneurotic and the psychotic will have the advantage of receiving expert medical care from the various specialties, particularly the department of internal medicine. Many psychotics require much more medical care than they receive in the average hospital exclusively for the mentally ill. The psychoneurotic and the early psychotic will be much more inclined to enter a general hospital than a hospital exclusively for the mentally ill. The patient has a feeling that he is treated as a patient rather than one who is queer.

With the department of psychiatry in the hospital, the psychiatrist will feel at home, and an integral part of the larger organization. His visits will not be hasty and perfunctory; he will feel that he has to spend some time every day and keep in constant touch with the various problems of medicine and surgery which must remain an integral part of his armamentarium if he is to continue to be a good psychiatrist.

The rest of the hospital staff, the physicians and surgeons, will receive aid in their various medical problems and will also become healthfully interested in the psychiatric aspect of disease, and will be of greater assistance in the management of their cases.

The disadvantages include the objections that may be raised by nonpsychiatric patients and their relatives, but which may be depended on to disappear with the better education of the public in general and a change in attitude of the individual toward the whole problem of mental illness. Some

psychoneurotics can be harmed by close contact with medical and surgical cases.

Cases of this type, however, have the advantage of being investigated under ideal conditions and need not be detained in the wards or halls of acute cases for any length of time. It is anticipated that eventually general hospitals will have special quarters for patients with psychosomatic and allied conditions.

A more serious objection is the disturbance created and the suicidal tendency of the psychotic. With our present facilities, especially as to the building of soundproof rooms, and the judicious use of sedatives, such disturbance can be brought to a minimum. Suicides occur in exclusively mental hospitals, and as a rule it is not difficult to prevent suicides in a closed ward.

Perhaps the greatest objection is the cost of the department. A psychiatric department will not serve its purpose without a sufficient number of psychiatrists, a trained psychologist, and the necessary nursing and social service work personnel. From this point of view, it is the duty of not only of the local social agencies and the local government, but of the state and federal government, to provide the necessary means. Psychiatric illness is very expensive and anything that can prevent or ameliorate it will pay well in the final analysis.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### PROGRESS IN NEUROLOGY

AN ENCOURAGING report of progress in treatment of a number of our most trying cases is made by Reese.<sup>1</sup>

Features of greatest practical general interest are here made available in condensed form.

With serum, sulfa drugs and penicillin at our disposal the problem of therapy in meningitis no longer baffles. The specific etiology must be established at once by spinal fluid examinations and blood cultures. A blood level of at least 10 to 15 mgms. and a spinal fluid level of seven to 10 mgms. must be built up quickly by initial intravenous doses in sulfa therapy. Depending upon the response or failure, penicillin by the continuous intramuscular drip or three-hourly injection method, type-specific serum, or antitoxin must be added. Many question that early intraventricular or intrathecal treatment prevents leptomeningeal adhesions with subsequent liquor pocketing. Punctures at various levels with air inflations are often necessary to break up adhesions.

Multiple sclerosis and poliomyelitis remain unamenable to our specific therapeutic efforts. Multiple sclerosis is by no means a rare disease; it

1. H. H. Reese, Madison, Wis., in *Ill. Med. J.*, Jan.

occurs in acute and in chronic relapsing forms with a great variety of symptoms—weakness or numbness of one, two, or all extremities, ataxia, nystagmus, diplopia, speech disturbances, reticular neuritis with central scotomata, disturbances of bladder function, and emotional lability. The acute fulminating encephalomyelitis has fever, headaches, stiffness of the neck, convulsions, hemiplegias, oculomotor palsies and commonly optic neuritis, and tends to improve or may disappear upon rest and supportive therapy. Spinal puncture helps in differentiating the disorders from syphilis, tumor, hemorrhage and infections of the central nervous system. In multiple sclerosis transient and light symptoms disappear in the far higher proportion of cases than in those cases with severe symptoms at the outset. Disappearance of signal signs does not indicate permanent arrest of the process. Rest, vitamin B complex, liver injections, high butter fat diet, heparin-dicoumarine and histamine infusions are our therapeutic resources.

Penicillin is not an efficacious drug in our anti-luetic therapeutic armamentarium. Malaria or fever treatment in combination with mapharsen, tryparsamide and bismuth are superior and cure the meningeal and parenchymatous types.

Myotonias (quinine) and myasthenias (prosthigmine) can be controlled in their symptomatology, but the etiology of the disease process remains obscure. All patients with myasthenias gravis should be subjected to x-ray studies in an effort to diagnose thymic involvement early, so that irradiation and surgical removal can be essayed in the treatment. The neuritic symptoms in the muscular disorders are commonly relieved by the whole vitamin B complex, but the more specific muscular symptoms respond better to wheat germ oil. Vitamin E (tocopherol acetate or ephynal acetate) plus vitamin B is often an ameliorator of amyotrophic lateral sclerosis.

The common vascular lesions responsible for clinical symptoms are 1) intracerebral and extracerebral edema, 2) spasm with minute softenings, 3) multiple military lesions such as hemorrhages or infarcts, 4) massive hemorrhages. The symptoms of "one" and "two" can be ameliorated by mechanical dehydration procedures, by vasodilators, fluid restriction and diet. Spontaneous intracerebral hemorrhage with a resemblance to the neoplastic syndrome can be explored through a burrhole with aspiration of the blood. It may be life-saving in comatose apoplexy.

The surgical treatment of hypertension is one of the greatest accomplishments in modern medicine to alleviate the afflicted ones and to control progressive irreparable damages. The treatment is restricted to those not over 50, with adequate renal function, cardiac compensation and a physical

status to withstand surgery. It is particularly recommended in early hypertension and in imminent malignant hypertension. The subjective symptoms disappear, b. p. comes back to a nondangerous level, the renal functions are improved and cardiac damage arrested.

During a migraine attack a new Sandoz preparation D. H. E. 45 has eliminated the unpleasant side effects of nausea, vomiting and muscle pain of ergotamine tartrate and the new drug eliminates possible ergotism.

In epilepsy the drug schedule should never be static. Bromides, phenobarbital, mebaral, sodium diphenyl hydrantoinate (Dilantin), alone or in combination, must be adjusted in the individual case from time to time. Tridione, a non-soporific drug, offers a cure for petit mal and like seizures, but is ineffective for grand mal seizures.

## UROLOGY

RAYMOND THOMPSON, M.D., Editor, Charlotte, N. C.

### A REVALUATION OF THE TREATMENT OF CARCINOMA OF THE PROSTATE GLAND

IT IS NOW ESTABLISHED that androgen suppression has a beneficial effect on as large a proportion of prostatic carcinoma as 70 per cent. However, it is also the experience of most observers that in the majority of cases androgen suppression alone is not sufficient to control the disease. Although no one has indicated that androgen suppression alone will cure, the patient in most cases experiences relief of pain, increase in weight, improved general blood picture and a decrease in the alkalinity and acid phosphatase of the urine.

Marquardt<sup>1</sup> calls attention to these facts, and goes on to make a revaluation of the subject.

If prostatic transurethral resection has been employed for severe obstruction, the prostatic bed heals more promptly, postoperative infection is more readily controlled, and the course may be as favorable as that in the usual case of benign prostatic obstruction. This improvement, while short-lived, is substantial and a real gain in the management of prostatic malignancy.

The recession of metastatic lesions has occasionally been remarkable, although whenever metastasis has occurred the prognosis is more grave. Occasionally, the x-ray study of metastatic lesions to bone has shown some improvement although it is questionable if these lesions ever entirely disappear. Marquardt has observed one biopsy-proved carcinoma of the prostate of 11-years duration. The patient ultimately died of the effects of his disease, but had a dozen years of comparative com-

fort and health. In 1942 he reported 81.8 per cent mortality on 71 patients with prostatic carcinoma followed over a three-year period. All were biopsy-proved. Two of these deaths were attributable to causes other than prostatic carcinoma. All had been treated by either castration or the oral use of stilbesterol.

The surgical removal of prostatic carcinoma leaves, as all agree, much to be desired. Most patients present themselves with well advanced lesions, and in about half the patients bony metastasis is obvious at the time of the initial examination. Even in comparatively early cases, extension into the periprostatic lymphatics has already taken place in many cases.

Huggins is quoted as saying that in many cases castration produces a more complete androgen suppression than does stilbesterol, and the proper dosage of stilbesterol is difficult to estimate. It frequently produces gastric irritation, and in some patients, mammary irritation becomes extremely annoying. One psychosis was seen following castration, lasting till death.

A small group of carefully selected cases were given x-ray therapy following castration. None of the six patients had obvious metastasis. All, however, had biopsy-proved carcinomas of the prostate gland. Their ages ranged from 81 to 34. All are living and in apparent good health; all appear to be free of evidence of carcinoma. This combination therapy would appear to offer more than either androgen suppression or surgical removal. It certainly is not applicable, in widespread metastasis, but in early cases it offers a reasonable opportunity for control of the disease. A 10-year follow-up of these patients will give the ultimate answer to the amount of benefit to be expected from this treatment. X-ray treatment is begun after maximal improvement is seen from castration. It is also needful to make an intense effort to control any urinary-tract infection that may be present with the *alternate* use of sulfa, penicillin and streptomycin.

All of us must agree with Marquardt that we have been too prone to consider carcinoma a local disease, rather than recognize it as a constitutional disease with local manifestations, demanding a high-caloric, high-vitamin diet, and small multiple transfusions, particularly if anemia is a feature. It is interesting and thought-provoking to note the suggestion that blood for these transfusions should come, preferably, from young adults, in whom the humoral influence on cell growth is more nearly balanced; and that the blood and serum of sterile men should have an adverse effect on carcinoma of the cervix and carcinoma of the breast.

<sup>1</sup> C. R. Marquardt, Milwaukee, in *Wisc. M. J.*, Feb.



## A Letter from the Retiring President

I wish to thank the Officers and Committees who served with me, and all other Members of the Tri-State Medical Association, for their loyal support during my year as President.

I feel that every member is justified in being proud of the meeting at Sedgefield Inn. . . . The large attendance and the number of applications for membership should be gratifying to us, since the meeting was preceded by several other medical meetings, and will be followed by several more in the near future.

Whereas the 48th Annual Meeting has just been concluded, I feel that now is the time to plan and begin work toward an even more successful 49th meeting in Charleston. I am afraid that in the past there has been a tendency of procrastination until a few weeks prior to the meeting. This delay, I believe, has caused more work and produced less results, than would be the case if active work was begun a few weeks after one meeting instead of a few weeks before the next one.

I would urge all members to talk with or write at intervals during the coming year, all members who have not been attending regularly; and at the same time I would urge all members to speak to those doctors in their immediate community who might be interested in becoming members of the Tri-State Medical Association, and supply each with an application blank.

With this in mind, let us all work to make the 1948 meeting in Charleston the most successful the Association has held in all the half-century of its existence.

—JOHN WYATT DAVIS, JR.

# SOUTHERN MEDICINE & SURGERY

JAMES M. NORTINGTON, M.D., *Editor*

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## THE TRI-STATE MEETING

THE meeting of the Tri-State Medical Association held at Sedgefield Inn, March 3rd and 4th, was the forty-eighth in the history of the organization. It will go down as the "Forty-eighth Annual Meeting;" but this is not exactly true, for conditions consequent on war prevented the holding of two meetings—one set for Lynchburg, Virginia, and one for Columbia, South Carolina. Had these been held it would have been the Fiftieth Annual Meeting.

A good many of our Fellows, some of them among the most loyal and devoted, predicted that if these two meetings were not held the Association would disintegrate and never hold another meeting. The meeting at Sedgefield will serve to reassure all who entertained such fears. The program—which Dr. R. B. Davis, Dr. C. M. Gilmore and Dr. H. F. Starr had such a large part in building—was of an exceptionally high order, and was given unstinted praise. The attendance was gratifying indeed, remarkably large when we take into account the inclemency of the weather—members from Southwest Virginia, and extreme Western North Carolina had to wait for a heavy covering of snow to be cleared off the roads before they could get started over the mountains, and snow fell heavily the afternoon of the 2nd for a hundred miles on every side of Greensboro—and the fact that six other meetings within a month of ours took away scores of our Fellows who could not leave their work for two meetings in so short a period of time.

The care taken of us by Sedgefield Inn left nothing to be desired, which is especially appreciated when we think of the fact that the Medical Society of the State of North Carolina is having to go outside the State to find hotel accommodations for its meeting to be held in May. An invited guest writes that we picked a charming place for our meeting and that he never ate better meals in his life—and he has lived all his life in epicurean Baltimore, was brought up on green-turtle soup and canvas-back duck.

The records at hand are incomplete as to numbers of new members added in any one year, but it is believed that the number added at this meeting—118—tops the list.

And the spirit of the occasion was all enthusiasm, all "on to Charleston" in February, 1948.

## PROOF THAT NORTH CAROLINA PEOPLE HAVE BEST MEDICAL CARE

### A FOUNDATION STONE REMOVED

THE PRESENT tremendous agitation for the improvement of medicine facilities and provision for more and better doctors in North Carolina was started because of the rejection of a larger number of those called to the colors in this State than in any other. These figures were accepted and pro-

claimed far and wide by a multitude, most of whom should have known better, as proof positive that North Carolina's people were getting the poorest medical care of any people in the Union.

This journal and a few others pointed out that this could not possibly be so, that the vast majority of the rejections were for causes entirely unamenable to medical cure; that the vast majority of those rejected had just as great life expectancy, could produce and support a family just as readily, as could those who were accepted, even if they had lost a few teeth, or had to wear glasses, had a hernia, or had an ear from which occasionally came a discharge. It was also pointed out that among the largest groups of rejectees, were those rejected because of deficient mentality, or of deficient education; or because of venereal disease which is entirely amenable to cure, and should not constitute a cause for rejection.

It was also pointed out that the question whether or not a man is suitable for military service, is one on which there could be much difference of opinion; and that it could be just as well argued that the large number of rejections in North Carolina was due to the fact that North Carolina doctors examining these men were more careful than other doctors to reject all who could not measure up strictly to the very high—in many cases absurd—requirements as set down by the authorities at Washington.

Officials of the State Board of Health have been among the loudest in proclaiming that North Carolina owes it to its people to rescue them from their abasement—at the bottom as to health service—private doctor's health service of course, for who would dare asperse our Public Health Officialdom? Apparently there has been no general recognition yet of the plain fact promulgated by Thomas Gradgrind, "Facts are stubborn things."

There is a certain amount of humor, of a grim kind, in certain figures just put out by an official of the State Board of Health of North Carolina. Death rates are not matters of opinion, but matters of fact. Few indeed are those who have been declared to be dead who were not in fact dead. Death rates are taken everywhere as indexes of the quality of medical care. This State Board of Health official is our authority for the following statements:

The death rate for the South is 10.5 compared with over 12 for the New England States.

North Carolina's death rate is 7.6, as compared with 10.9 for the nation.

In the nation cancer killed 129.1 for each 100,000 people, in North Carolina the rate was 65.9.

The number of North Carolina deaths from tuberculosis was 35.1, as compared with 41.3 for the nation.

Our suicide rate is 6.3 as compared with 10 for the nation.

Do these figures show that the people of North Carolina have the poorest medical care of any people in the Union?

Some will say that the New England States are old states, and that the population of old states always includes a larger percentage of old persons, and that the death rate among the old is greater than that among the young. Well, North Carolina is an old State too, pretty nearly as old as any of the New England States, older than some of them. And North Carolina is a whole lot older than the vast majority of the states of the Union; still her death rate is only 7.6 per 1,000, while the rate for the National is 10.9—North Carolina's rate nearly 50 per cent better.

The American Cancer Society, and every other organization or individual who knows anything about the subject, will tell you that early recognition of cancer is the most important factor in lowering the mortality from cancer. Is not the fact that the cancer death rate of North Carolina folks is just a little bit more than half that for the Nation pretty good evidence that North Carolina doctors are on the alert to recognize cancer, and to prevail on the victims of cancer to seek treatment early? Is not the same reasoning applicable to the figures for tuberculosis—35.1 for North Carolina, 41.3 for the Nation?

And it might reasonably be argued that North Carolina's suicide rate of only 6.3, as compared with 10 for the Nation, is strong evidence that North Carolina doctors are able to keep North Carolina people pretty well contented with their lot, at least more contented by a wide margin than the people the nation over—and to keep his patients contented is a large part of the function of a doctor.

This journal has had to call attention more than once to those old Thomas Carlyle called the God-Sakers—those who were always demanding for God Sakes let's do something. These God-Sakers—politicians, newspaper men, college presidents and professors, professional entertainers, doctors, and miscellaneous do-gooders—owe the general medical profession of North Carolina an abject apology. They owe it to the members of the General Assembly to explain to these members that later evidence has removed the foundation stone of the arguments they have used to induce them to refuse to pay teachers a respectable wage, that money might be had to spend on a fantastic medical scheme.

And, if they will have a four-year medical school, they owe it to the taxpayers of North Carolina to provide the third and fourth year's instruction where it can be given at half what it would cost in the village of Chapel Hill; and they owe to all those who will ever be patients of the doctors who are to have the third and fourth year's instruction in the Medical School of the University

of North Carolina to provide that instruction where doctors can be turned out competent to take care of sick folks as they will need to be and should be in private practice.

And it, strangely, must be said again that, when the Government at Washington "gives" toward anything in North Carolina, it only hands back a *part* of what it has taken out of the pockets of us people in North Carolina—as taxes.

Strange that our Governor, the President of our University, and our other big-wigs can't grasp that. Or, do they?

#### COMPARATIVE EFFECT OF SULFONAMIDE AND PENICILLIN IN PNEUMONIA

(T. Anderson & M. S. Ferguson, Glasgow, in *The Lancet* (Lond.), Dec., 1945)

The data show that, in the average case, there is little to choose between the two methods of treatment. But in this series three patients gravely ill recovered after treatment with penicillin, suggesting that there is a small proportion of pneumonic patients over 40 years for whom penicillin will represent a definite improvement over sulfonamides.

Some tentative guides for the efficient use of penicillin may be formulated. In severe cases an adequate dose of a sulfonamide should be given in the first 24 hours. A routine white-cell count, when treatment is begun, will be of value in picking up the leucopenic patient (not uncommon in this age-group) who may respond unsatisfactorily to sulfonamides. The clinical assessment of the patient should be taken into account. We are satisfied that a poor cardiovascular system remains the most important prognostic factor in pneumonia, and should constitute an indication for combined therapy. Extensive pulmonary involvement, severe cyanosis, and dyspnea are the other indications which may call for the support of chemotherapy by penicillin.

The fact that we now have two effective methods of attack makes it more than ever important that the closest cooperation should be established between the laboratory and the clinician if the best results are to be obtained in the management of pneumonia.

#### MANAGEMENT OF CONSTIPATION WITH A REFINED PSYLLIUM COMBINED WITH DEXTROSE

(L. H. Block, Chicago, in *Amer. J. Dig. Dis.*, Feb.)

The group of 40 subjects consisted of 22 men, aged 33 to 77, and women aged 16 to 69 years; all had been institutionalized for periods of from eight months to 38 years, with the exception of two employees and one private patient. All patients were generally well nourished and developed. With the exception of those with diabetes none presented significant pathologic changes other than those characteristic of their respective neurologic disease. The latter included all the types usually encountered in such institutions, with their well known tendency to chronic constipation.

An intensive and comparable study was conducted to determine the effect of Metamucil on the bowel and its contents, its clinical effectiveness and the occurrence of side reactions of 40 patients. Metamucil was found to be effective in both the atonic and spastic types of constipation, more so in the latter. No untoward side reactions were observed. Metamucil is not habit forming or harmful and may be used over long periods of time without untoward effects.

## NEWS

### DUKE UNIVERSITY SCHOOL OF MEDICINE

The Duke Medical Alumni will hold their second reunion on April 24th to 26th. The following program has been prepared, with the graduates and those trained at Duke to give the papers.

Thursday morning—April 24th

Registration.

Thursday afternoon

Dr. O. J. Bateman, '39—"Use of B. A. L. in Gold Poisoning."

Dr. Charles Styron, '38—"The Genito-Urinary System in Diabetes Mellitus."

Dr. George Harrell, '36—"Plasma Volume and Extra-Vascular Thiocyanate Space in Rickettsial Spotted Fever."

Dr. B. B. Dalton, '32—"Meeting the Problems of the General Practitioner."

Dr. P. B. Parsons, '36—"Intra-abdominal Herniation. Its Radiological Diagnosis."

Mock Clinic (by Junior and Senior students).

Class and or departmental entertainment.

Friday—April 25th

Dr. George Gilbert—House officer 1939-44—"The Cellular Changes in Carcinoma of the Prostate Following Hormonal Therapy."

Dr. Paul Reque, '34—"An Evaluation of the Use of Antibiotics in Dermatology."

Dr. J. S. Hiatt, Jr., '40—"Pneumoperitoneum in the Treatment of Pulmonary Tuberculosis."

Dr. David Wilson—House officer 1942-46—"Lucite Balls in the Treatment of Pulmonary Tuberculosis."

Dr. Harold H. Kuhn, '40—"Open Versus Closed Treatment of Acute Osteomyelitis."

Exhibits.

Business Meeting.

Presentation of New Officers.

Reunion of 65th General Hospital and 38th Evacuation Hospital.

Open House—Local Alumni.

Dinner-Dance—Hope Valley Country Club.

Saturday, April 26th

Dr. Eleanor Easley, '34—"A Study of Maternal Morbidity with the Use of Caudal Anesthesia."

Dr. Robert H. Padenz, '35—"Cranial Trauma and Brain Movement. Direct Observation of the Brain with High Speed Cinematography."

Dr. R. H. Riddon—House officer 1931-35—"Consideration of the Mechanisms by which a Rapid Diminution Occurs in the Parasitemia in Ducks Infected with *P. lophurae*."

Dr. David A. Young—House officer 1935—Title later.

Dr. Charles W. Hock, '41—"Radiation Injuries of the Intestines."

Duke-Navy baseball game.

### FORMAL OPENING OF CHOWAN HOSPITAL

Chowan County Hospital was opened to the public for inspection February 28th, and the first patient admitted at 9:30 the next morning.

The first patient admitted was Mrs. Velma Irene Altman, of Edenton. The hospital is located at the Edenton Naval Air Station, occupying one of the permanent buildings on the base, which has been leased by the Town of Edenton from the Navy Department. Fifty-seven hospital beds are ready for use, with 12 private rooms for white patients and two semi-private rooms for Negro patients.

Ample room is available in the hospital to set up 100 beds.

Dr. Frank Wood, a native of Edenton, is surgeon and medical director, and Miss Lucille Hall of Durham is business manager.

#### UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE

On February 7th and 8th the National Conference on Rural Health held its second annual meeting in Chicago. Dr. H. B. Mulholland, Professor of Medicine, was Co-chairman of the round-table discussion, "Methods of Bringing and Holding Physicians and Dentists in Rural Areas."

Dr. William Gayle Crutchfield, Professor of Neurological Surgery, spoke before the Fifteenth Annual Assembly of the Southeastern Surgical Congress in Louisville, Kentucky, on March 10th, on "Surgical Treatment of Hypertension."

On January 28th Dr. Samuel Alexander Vest, Jr., Professor of Urology, spoke before the New Jersey Summit County Medical Society on "Prostatic Cancer." On February 24th, he held several clinics at the seminar at the University of Alabama and was guest speaker on "Male Endocrinology."

The Phi Beta Pi Medical Fraternity will have Dr. Harold L. Stewart of the National Cancer Institute on March 21st as guest speaker. Dr. Stewart will speak on "Experimental Gastrointestinal Cancer."

Dr. E. H. E. TAYLOR has been elected President of Burke County Medical Society; DR. JOHN S. MCKEE, Vice-President. DR. JOHN C. REECE was re-elected Secretary-Treasurer.

DR. N. THOMAS ENNETT has resigned as Health Officer of Pitt County to become Health Officer of his native County of Carteret.

DRS. ROBERT A. WHITE and HARMON J. BAILEY announce the opening of their new offices for practice limited to Obstetrics and Gynecology, Number 23 Flint Street, Asheville, North Carolina.

DR. JOSEPH BLALOCK, Superintendent of Southwestern State Hospital, Marion, is the new President of the Mental Hygiene Society of Virginia.

DR. C. MARSHALL LEE, Jr., who has practiced at Charlottesville, Va., since his discharge as a lieutenant-commander in the Navy in December, 1945, has accepted a position on the staff of the Norburn Hospital, Inc., at Asheville, N. C., effective April 1. A native of Charlottesville, he is the son of Dr. Claude M. Lee.

VERMOOTEN (*Journal of Urology*, July, 1946) describes a method of diagnosis of rupture of the posterior urethra. It is often difficult to determine whether the bladder or the posterior urethra is ruptured. In his experience in crushing injuries involving the pelvis the most common urethral injury is a complete rupture of the posterior urethra at the apex of the prostate. To determine whether such an injury has been suffered, rectal examination is made to palpate the prostate; if the apex of the prostate can be located and pushed up and away, this indicates a complete rupture of the urethra.

FOLLOWING A HEMORRHAGE of duodenal ulcer origin in a patient using aluminum hydroxide as an antacid, small concretions were found in the stool. The passage of these concretions through the intestinal tract was accompanied by severe intermittent cramps and pain. Chemical analysis of these concretions showed them to be composed of fatty acid salts of aluminum with a small amount of neutral fat and traces of cholesterol and protein.

—G. P. Child and W. K. Hall, Augusta, Ga., in *Amer. J. Dig. Dis.*, Feb.

## BOOKS

THE DIFFERENTIAL DIAGNOSIS OF JAUNDICE, by LEON SCHIEF, Ph.D., M.D., Associate Professor of Medicine, University of Cincinnati Medical School. *The Year Book Publishers, Inc.*, 304 S. Dearborn Street, Chicago 4. 1946. \$5.50.

Most of us can remember, and some of us now encounter once in awhile, a statement from a patient that he or she had "yellow jaundice" or "yellow janders" at some time. The author has been impressed with the need for a treatise on the disorders which may cause jaundice. Advances in the treatment of tumors of the pancreas and its region have emphasized the need for such a book. The author expresses the hope that the book will aid in hastening the differential diagnosis of jaundice so as to remove the ground for Whipple's criticism of the clinician for "studying these patients to death."

Certainly all of us will join wholeheartedly in this hope and welcome the author's attempt.

INTRACRANIAL COMPLICATIONS OF EAR, NOSE AND THROAT INFECTIONS, by HANS BRUNNER, M.D., Associate Professor of Otolaryngology, University of Illinois College of Medicine, Chicago. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago 4. 1946. \$6.75.

This work is based on 25 years of experience as clinician and teacher in this field. The author assumes acquaintance on the part of the reader with the principles of otorhinology and neurology. He says that although the incidence of intracranial complications of ear, nose and throat infections has decreased in the last few years, the number is still sufficient to constitute a problem of importance.

Due credit is given to chemotherapy, although it is said that not infrequently chemotherapy of the primary conditions renders diagnosis and treatment of the complications more difficult. The book is an intensive cultivation of a small field and will be of great interest and value to specialists in this field.

OFFICE ENDOCRINOLOGY, by ROBERT B. GREENBLATT, B.A., M.D., C.M., Prof. of Endocrinology, University of Georgia School of Medicine; with a foreword by G. LOMBARD KELLY, M.D., Dean, University of Georgia School of Medicine. Third edition. Charles C. Thomas, 301-327 East Lawrence Ave., Springfield, Ill. 1947. \$4.75.

The very favorable reception given the first edition, and the advances made since the first edition was published made necessary the publication of a second and a third edition within the short period of five years. The third edition, like its predecessors, confines itself to endocrine problems which present themselves frequently and to those not of endocrinology which are encountered in daily practice. It is a book written for the practicing physi-

cian who diagnoses and treats satisfactorily 75 to 85 per cent of the conditions which come under his care.

THE 1946 YEAR BOOK OF GENERAL THERAPEUTICS, edited by OSCAR W. BETHEA, Ph.M., M.D., F.A.C.P., Professor of Clinical Medicine, Tulane University School of Medicine (retired); Member of the Revision Committee of the U. S. Pharmacopeia 1930-40. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago 4. \$3.75.

The large amount of good material in this field published in the past year which is discriminatively selected for comment in this volume makes it one of exceptional value.

MODERN DERMATOLOGY AND SYPHILOLOGY, by S. WILLIAM BECKER, M.D., Clinical Professor of Dermatology, University of Chicago; and MAXIMILIAN E. OBERMAYER, M.D., Clinical Professor and Chairman of the Department of Dermatology, University of Southern California. Second edition, 461 illustrations in text, 37 full color plates. *J. B. Lippincott Company*, E. Washington Square, Philadelphia 5, Pa. 1947. \$18.00.

By revision of the text of the first edition and the addition of much new material this exhaustive textbook of dermatology has been brought right up to the present. The authors have concluded that the increasing attention paid to functional factors in cause and treatment, and the value of viewing skin manifestations as processes rather than morphologic entities should be given additional stress.

There is more discussion of treatment in detail. The more recently introduced therapeutic agents are critically evaluated. The subject of trophic and deficiency diseases is given an entirely new writing, in which the great advances in vitamin therapy are duly chronicled. There is an elaborate chapter on tropical diseases, a subject which is of rapidly increasing importance. The section on syphilis has been thoroughly revised, and the value of quantitative tests in the diagnosis, and the evolution of the rapid treatment method are amply treated of.

This encyclopedic work will certainly maintain its position as one of the foremost textbooks of dermatology and syphilology of our time.

THE 1946 YEAR BOOK OF GENERAL SURGERY, edited by EVARTS A. GRAHAM, A.B., M.D., Professor of Surgery, Washington University School of Medicine. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago 4. \$3.75.

Special attention is called to an analysis of idiopathic dilatation of the esophagus, to a report of experiences with the use of penicillin in the treatment of appendicitis and the conclusion that removal of the appendix is a very questionable procedure if more than 48 hours have elapsed since the beginning of the attack, and to the results obtained by Fincher of Emory University in a num-

ber of cases of brain abscess in which total excision and the use of sulfonamide and penicillin was successful in all cases.

The rule of several years standing of posing a number of practical questions and indicating the pages on which answers may be found is continued.

#### MARRIED

Dr. George Dail Penick and Miss Marguerite Murchison Worth, both of Raleigh, were married on February 8th.

Dr. Hugh Edward Tyner, of Leaksville, and Miss Anna Katherine Bell, of Morehead City, were married on February 22nd.

#### DIED

Dr. Franklin Brevard King died recently at his home in Pearl, Texas. He was born in Iredell County in 1865, and was a graduate in medicine of the University of Maryland in 1894. He has many relatives in Iredell County.

Dr. James Judd, 75, died March 7th at his home at Fuquay Springs, N. C., of a coronary occlusion.

Dr. Judd was born in 1871 in Wake County, attended Trinity College for three years, and received his degree of doctor of medicine from Baltimore Medical College in 1897, since which time he had been practicing medicine in this state.

Dr. John A. Gibson, 71, died in Loudon County (Va.) Hospital March 9th after an illness of several weeks. He had practiced medicine at Leesburg and in his native county since 1903.

Dr. John E. Hamner, 54, prominent Petersburg, Va., eye specialist, died February 24th, after an illness of six weeks. Dr. Hamner had been associated with Dr. C. S. Dodd in practice since 1937. He was a graduate of the Medical College of Virginia's class of 1916.

Dr. William M. Holman, 86, for a half-century a practitioner of Goochland County, Va., died at his home in Richmond, February 22nd. He was a native of Goochland and a graduate of the Medical College of Virginia in 1890.

BETWEEN 1851 and 1861, the French taught us the use of single bedsteads, and we introduced washhand basins and other lavatory arrangements to their notice, whilst the only permanent advantage either of the nations gained from the Crimean War was the use of the bath and bathroom, taught us by the Russians, widely used now in this country, not so widely in France.—*Lawson Tait*.

#### *The School-Child's Breakfast*

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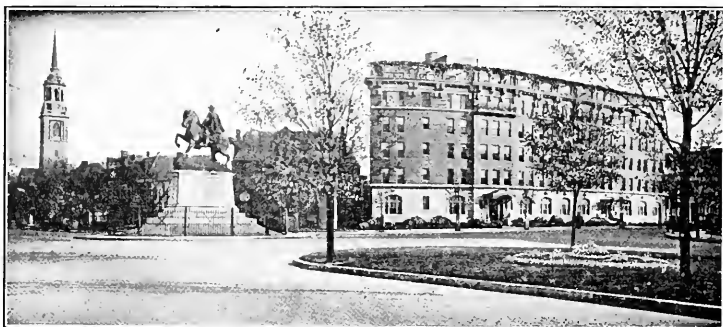
RHEUMATIC FEVER produces well over 90 per cent of all heart disease in patients under the age of twenty.



Mrs. George E. Marshall, Mount Airy, N. C., receives the congratulations of leaders of the American Cancer Society for ten years of service in the fight against cancer. Mrs. Marshall has been commander of the North Carolina Division since 1941. In the picture—left to right—are Dr. Charles S. Cameron, New York, assistant medical director of the national organization; Dr. Thomas Leslie Lee, Kinston, N. C., chairman of the cancer committee of the Medical Society of the State of North Carolina and of the North Carolina Cancer Control Planning and Policy-Making Board; Mrs. Horace B. Ritchie, Athens, Ga., regional commander; Mrs. Marshall; and Dr. Alton Ochsner, New Orleans, head of the Surgery Department of Tulane University and regional medical director for the American Cancer Society.

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JAMES M. NORTHINGTON, M.D., Editor

VOL. CIX

APRIL, 1947

No. 4

## Metastatic Malignancy of the Brain and Spinal Cord A Clinico-pathologic Study\*

MATTHEW T. MOORE, M.D.,\*\* Philadelphia

A COMPARISON of an analysis of 18 cases of metastatic malignancy to the brain and spinal cord examined in a laboratory of neuropathology with the data concerning metastatic lesions of the nervous system culled from the literature disclosed certain facts which appear of interest with respect to the increasing incidence of metastatic lesions to the central nervous system, the relative infrequency of antemortem diagnosis, the multiple and non-specific character of the neurological symptoms and the apparent increase in the prevalence of metastatic bronchogenic carcinoma.

Life expectancy tables have shown that from 1900 to 1940 there has been an increased life expectancy at birth of 14.6 years for white males and 16.2 years for white females.<sup>1</sup> Thus there has been an increase of the population in the age groups over 40, a realm in which there has been a heightened death rate due to cardiovascular disease and cancer. The former constitutes the first most frequent cause of death in the United States. The second most frequent cause of death is cancer of all forms.

In 1900 the incidence of cancer was 64.0 per 100,000 population; in 1940 this had risen to 120.3 or an increase of 88 per cent.<sup>1</sup> The peak of cancer incidence lies between 40 and 65 years of age. It will be seen, therefore, that the increase of life expectancy carries with it the increased likelihood of developing malignant disease.

A survey of the literature of the first three decades of the 20th century seems to indicate that the incidence of malignant metastasis to the central nervous system was not as high as the more recent reports in the literature. Krasting<sup>2</sup> in 1906 reported a series of 1078 cases of cancer in which 3.6 per cent revealed metastasis to the nervous system. In 1917 Levin<sup>3</sup> disclosed a percentage incidence of 4.8 per cent of cases of metastatic malignancy to the central nervous system. Sheldon<sup>4</sup> in 1926 reported 5 per cent of a series of brain tumors as being metastatic in origin. Walshe<sup>5</sup> in 1931 reviewed a series of intracranial tumors and cited 6.4 per cent as being metastatic. In 1932 Cushing's<sup>6</sup> monograph of 2000 cases of verified brain tumors showed a 4.2 per cent incidence of metastatic lesions. A somewhat higher percentage of metastatic tumors of the brain was given by Dandy,<sup>7</sup> who found 10 per cent of such lesions. An unusually low incidence was reported by Adson,<sup>8</sup> who found 12 cases of metastatic malignancy in a series of 167 brain tumors. A more recent survey by Globus and Meltzer<sup>9</sup> in 1942 wherein the authors drew their material from the services of medicine, general surgery, neurology and neuro-

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Seaside Inn, Greensboro, N. C., March 3d and 4th.

\*From the services of the Graduate Hospital, University of Pennsylvania, Jewish and Doctors Hospitals of Philadelphia, Norristown State Hospital, St. Joseph's Hospital, Reading, Pa.

\*\*University of Pennsylvania Graduate School of Medicine.

surgery, probably gives a truer over-all picture of the incidence of metastatic tumors of the brain, their figure being 13.5 per cent. A high rate of frequency of metastatic tumors of the brain was observed by Elkington<sup>10</sup> in 1935, who stated that 20 per cent of his series of intracranial tumors were secondary to malignancy elsewhere in the body. In a group of 200 tumors of the brain Behrend and Schiff<sup>11</sup> found 10 per cent to be metastatic carcinoma. Neustetter<sup>12</sup> in 1944 reported metastatic carcinoma involving the nervous system in 143 cases. This was taken from a series of 6,761 patients representing an incidence of metastasis to the brain of 2.15 per cent. This is the only low figure in recent surveys.

The majority of reports in the literature during the past 20 years indicate the increase of cerebral metastatic bronchogenic carcinoma. Winkelman and Eckel<sup>13</sup> in 1927 stated that "approximately one-half the metastases arose from primary cancer of the breast, lung and prostate and the uterus is next in the list of frequency but represents a much smaller percentage than the first three." In their report of 23 cases, seven had the primary lesion in the breast, five were from the prostate, two from the rectum and two from the female generative organs. The remainder were single sources of origin. Not one case was bronchogenic carcinoma. Krasting's<sup>2</sup> survey (1906) showed an incidence of 22.2 per cent from the prostate, 18.8 per cent from the breast; 3.4 per cent from the uterus. Grant's<sup>14</sup> cases showed almost one-half to have their origin in breast cancer. Recently the evidence of bronchogenic carcinoma as coming to the fore can be seen in the reports of Meagher and Eisenhardt,<sup>15</sup> who found in 40 cases of intracranial metastasis 35 per cent of pulmonary origin and 25 per cent from the breast; Brunner<sup>16</sup> found 28 of 73 cases to be of bronchogenic origin, 12 cases were secondary hypernephroma; in only a little over 4 per cent was the origin in the breast. Pass<sup>17</sup> found an incidence of 50 per cent of 32 cases of cerebral metastasis as being bronchogenic carcinoma, whereas cancer of the breast was found in 33.7 per cent. Hare and Schwartz,<sup>18</sup> who reviewed 100 cases of intracranial metastatic growths, found the primary source in the bronchus in 42 per cent and in the breast in 23 per cent.

In the series presented here, seven or 39 per cent had as the primary focus bronchogenic carcinoma, four or 22 per cent were derived from mammary carcinoma. Two cases were hypernephroma and there were one each of embryonal carcinoma of the kidney, basal cell carcinoma, chorionepithelioma, carcinoma of undetermined origin and sarcoma.

In discussing primary carcinoma of the lung and its tendency to metastasize, Fried<sup>19</sup> said, "Primary

carcinoma of the lungs possesses a vigorous metastatic power and its metastases are as a general rule, widespread." In his group of 47 cases of carcinoma of the lung 16 developed metastasis to the brain. This relatively high frequency of metastasis of bronchogenic carcinoma to the brain is receiving greater attention as is manifest by the reports of the following authors: Olsen<sup>20</sup> found 36.3 per cent metastasis to the brain in his cases of bronchogenic carcinoma; Arkin and Wagner,<sup>21</sup> and Graham<sup>22</sup> reported over 22 per cent metastasis; Koletsky<sup>23</sup> in a study of 100 cases likewise reported an incidence of over 22 per cent; King and Ford,<sup>24</sup> who reviewed 100 cases of metastasis to the central nervous system due to carcinoma of the lung, stated that one-third of all cases of carcinoma of the lung ultimately metastasize to the nervous system. Ochsner and De Bakey<sup>25</sup> observed metastasis to the brain in 16.5 per cent of 3,047 cases of cancer of the lung. Roger, Cornil and Paillas<sup>26</sup> reported 28 cases of metastatic tumors of the brain in which more than one-third were secondary bronchogenic carcinoma. Tinney and Moersch<sup>27</sup> reviewed 448 cases of carcinoma of the lung in which 12 per cent had symptoms referable to the nervous system. Seventy cases in the total series were autopsied and in 19 per cent of this group cerebral metastasis was found. The majority of cases of metastatic malignancy to the brain during recent years have been due to bronchogenic carcinoma, which may be seen by the appended reports by numerous authors.<sup>28</sup>

In the series of 18 cases reported here only five were diagnosed during life as metastatic malignancy to the brain and in these five cases there was a history of known malignancy. Only two cases were suspected during life of the possibility of metastatic malignancy to the brain or cord. Thirteen cases were undiagnosed during life. A review of the literature reveals a somewhat similar failure of recognition of the presence of cerebral malignant metastasis because of the non-specific character of the neurological symptoms and signs, the clinical diagnoses being cerebral vascular "accidents," primary intracranial tumors, hypertensive encephalopathy, meningo-encephalitis and the like.

These accumulated data indicate the evidence that we are still not sufficiently cancer-conscious and that there is call for a greater awareness of the likelihood of abrupt or moderately progressive symptoms of cerebral disease occurring between the ages of 40 and 65 and, indeed, at other age levels, being due to metastatic malignancy to the central nervous system. The corollary to this is the need for thorough, intensive study of the patient as a whole.

The 18 case histories which follow are offered to illustrate some of the foregoing statements in

the hope of illuminating some of the diverse aspects of metastatic malignancy to the central nervous system. They are arranged in the order of frequency from the primary source and constitute a group of cases taken from a series of 473 specimens studied at the John L. Eckel Laboratory of Neuropathology, University of Pennsylvania Graduate School of Medicine between September, 1936, and November, 1946, thus being 3.8 per cent of the total number of cases studied. Among these 473 specimens examined there were 49 primary tumors of the brain in addition to the 18 cases of metastatic lesions, the latter, therefore, comprising 26.8 per cent of the total of these two types of lesions.

#### BRONCHOGENIC CARCINOMA (7 CASES)

**CASE 1. Summary:** W. S., man aged 64 years. Diabetes insipidus of four months' duration, sudden unconsciousness with hemiplegia and nystagmus, and death within 48 hours. Undetermined etiology during life; necropsy findings of primary bronchogenic carcinoma with widespread metastasis including brain and posterior lobe of pituitary body and hypophyseal stalk.

**Comment:** The history, physical examination and laboratory data in this case offered no clues with respect to the cause of the symptoms of diabetes insipidus. Moreover, the physical findings of bronchovesicular breathing in the left lung and the roentgenographic interpretation of the area of density in the left lung were considered as inflammatory and not malignant in origin. The initial phase of diabetes insipidus was of relatively short duration—four months—and the terminal phase was two days in duration. The etiologic significance of the diabetes insipidus was not manifest until the microscopic studies had been completed and the metastatic involvement of the pars posterior of the pituitary body and of the hypophyseal stalk were uncovered. The terminal aspects of hemiplegia and rotary nystagmus in a 64-year-old individual could have been interpreted as vascular in origin and certainly shed no light on the metastatic malignant basis for these signs.

**CASE 2. Summary:** R. M., woman, aged 53 years. Acute onset of vomiting, semi-stupor and meningeal signs in a known hypertensive, considered as meningo-encephalitis or cerebral vascular disease. Elevated C. S. F. pressure and ventriculography showed presence of intracranial lesion considered primary. Necropsy findings of meningeal carcinomatosis, focal metastatic lesion in island of Reil area, and primary bronchogenic carcinoma right lung.

**Comment:** The history of a rather acute onset of diffuse symptoms with vomiting, lethargy and meningeal signs led to the early consideration of meningo-encephalitis. With the presence of high intracranial pressure and later air studies showing a uniform dilatation of the ventricular system, brain tumor was the most likely diagnosis. Localization was not made and the metastatic nature of the lesion was not definitely entertained. The carcinoma nodule was found in the right lung and did not bear out the x-ray report of a suspicious "tuberculous or malignant" lesion in the left lung. (Figs. 1, 2.)

**CASE 3. Summary:** Sudden onset of pain in groin following trauma with rapid development of paraplegia, sensory impairment in both lower limbs and ascent of disturbed sensation to just above the nipple line. Negative Queckenstedt test. Considered acute ascending myelitis with transverse myelitis. Spinal cord revealed extra and intramedullary metastatic carcinoma and transverse myeloma-

cia. Few lesions of similar metastatic cellular elements in occipital lobe. Bronchogenic carcinoma of left lung and metastatic involvement of tail of pancreas found at necropsy.

**History:** G. M., man aged 56 years, was admitted to hospital on April 4th, 1944, with the history of sudden onset of pain in the right groin several weeks before, following heavy lifting. The following day there was weakness of the right leg which continued to progress. Numbness of the right leg began one week after the acute onset. About March 29th weakness in the left leg was noticed and low back pain appeared. By April 3rd he was unable to walk and experienced numbness in both lower limbs. He developed urinary incontinence at this time. At the time of admission he was incontinent of bowel and bladder and complained of pain and "tightness" around the chest. He had had a non-productive cough for 25 to 30 years.

**Examination:** There was no evidence of cerebral disease. There was a flaccid paraplegia of the lower limbs. Sensation in all forms was lost from a sharply defined level one inch above the nipple line down. A zone of hyperalgesia was present just above this level. At the time of this examination, in the light of the history, the diagnoses considered were 1) acute ascending myelitis with transverse myelitis, 2) acute infectious radiculomyelitis (Guillain-Barré syndrome).

**Laboratory data:** Hematologic studies showed 17,000 leucocytes on April 5th, 1944, negative serology; serum phosphatase (acid) on April 6th, 1944—16 units; other blood studies negative; cerebro-spinal fluid normal; x-ray lumbar spine and pelvis showed some moth-eaten areas in the right descending ramus of the pubic bone, which were considered Pagetoid changes or possible metastatic lesions. The dorsal and cervical spine revealed no gross abnormalities.

**Course:** Queckenstedt test on April 14th, 1944, revealed a patent spinal fluid pathway and the initial pressure was 190 mm. C. S. F. The fluid was clear and colorless. The medical consultant suggested the diagnoses of 1) compression fracture, 2) herniation of nucleus pulposus, 3) malignant metastasis from prostate. The chest was negative. Urologic consultation divulged no evidence of prostatic malignancy. On April 10th the coughing increased and he became weak. On the 15th and 16th breathing was labored. The neurologic findings were unchanged and the sensorium was clear. He died April 17th, 1944.

**Postmortem findings:** The brain grossly revealed edema and congestion. The spinal cord showed swelling, hemorrhage and necrosis in the lower cervical segments. Section at the upper thoracic levels showed hemorrhagic necrosis and yellowish discoloration. The gross diagnosis was myelitis with hemorrhage and softening of the cord. The left lung contained a tumor mass the size of a lemon involving the main bronchus of the upper lobe. The tail of the pancreas contained a small, firm mass.

**Histologic findings:** At the level of the upper thoracic cord there was an extramedullary mass of tissue which encased the spinal roots and at several points this tissue invaded the cord proper in finger-like projections. This cellular mass was composed of irregular islands of deeply staining epithelial cells arranged in acinar formation. In addition there were huge numbers of small round cells appearing clumped together and cuffing vessels. Another section of upper thoracic cord showed complete loss of normal architecture with areas of necrosis and liquefaction. Another segment of thoracic cord revealed a complete transverse myelomalacia with adjacent metastatic malignant tissue which penetrated the cord in areas (Figs. 3, 4). In the brain there were small clumps of cells in the white matter of the occipital lobe, the microscopic appearance of which was identical to that of the cord involvement. No other part of the brain was affected. Diagnosis—

metastatic carcinoma to thoracic cord and brain, transverse myelomalacia cervico-thoracic cord. The histologic diagnosis of the pulmonary and pancreatic tumors was bronchogenic carcinoma.

*Comment:* This patient had acute onset of symptoms indicating involvement of the caudal roots or lower cord following heavy lifting. Within a short period of time there was evidence of an ascending involvement of the cord as shown by sensory and motor disturbances of one and then of both legs with the development of a sensory level just above the nipple line. The consideration of an ascending myelitis and transverse myelitis was felt justified. Before laboratory studies proved essentially negative the diagnosis of the Guillain-Barré syndrome was also entertained. The significance of the cough may have been discounted because of its presence for 25 to 30 years; however, x-ray examination of the chest was requested to uncover the possibility of bronchiectasis. The spinal cord findings of metastatic carcinoma surrounding the cord with finger-like projections into it, and transverse myelomalacia, indicate the mechanism of the process and explain the ascent of symptoms. The plausible explanation is that carcinoma en plaque enveloped the cord choking off the blood supply with secondary infarction, liquefaction and the production of a transverse myelomalacia. The weakened cord then offered no resistance to the invasion by the malignant process. At the time of admission to hospital the cord involvement probably was too far gone for therapeutic aid. The interesting relationship of trauma (heavy lifting) to the onset of symptoms had a medico-legal aspect in this case.

*CASE 4. Summary:* A. B., Negro man, aged 49 years. Onset with diffuse cerebral signs, followed by lateralizing hemiplegia; x-ray report—pulmonary tuberculosis; craniotomy and biopsy showing metastatic carcinoma; revision of x-ray report to carcinoma of lung; necropsy—diffuse multiple carcinomatous nodules in the brain and pituitary; lungs—columnar cell bronchogenic carcinoma, fibro-caseous tuberculosis, fibrosis and anthracosis.

*Comment:* The early manifestations of diffuse cerebral involvement associated with loss of weight in a Negro seemed to indicate the presence of lues or a degenerative cerebral process. The x-ray interpretation of pulmonary findings, as tuberculosis, gave no clue as to the underlying cause. With the appearance of definite localizing signs operative intervention was justified but even then the etiologic background was not determined until biopsy study revealed metastatic carcinoma. The necropsy findings of widely scattered lesions in the brain explained the admission clinical manifestations of a diffuse non-localizable cerebral involvement. It is interesting to observe the presence of three types of morbid processes in the lung (Fig. 5).

*CASE 5. Summary:* H. S., man, aged 77 years. Sudden onset of dizziness, nausea and vomiting in a known hypertensive with cardiovascular disease, no evidence of malignancy of the body or brain during stay in hospital; few, if any, neurological signs. Gross necropsy findings of large left cerebellar "abscess," microscopic findings of metastatic bronchogenic carcinoma. Primary source bronchogenic carcinoma found after review of autopsy material.

*Comment:* The abrupt onset of nausea, vomiting and vertigo in a hypertensive individual disposed to the consideration of a vascular hemorrhage or cerebral vascular disease as the underlying cause. There was nothing in the history or examination to cause one to suspect malignancy either in the body or secondary in the brain. The gross appearance of the lesion in the left cerebellar hemisphere would suggest that greater symptomatology would have been present and that the C. S. F. pressure should

have exceeded the normal finding of 130 mm. C. S. F. The appearance of the lesion itself at first suggested that of a tuberculous abscess with central caseous necrosis. It was not until microscopic study was done that the metastatic nature of the lesion was uncovered. Furthermore, it was necessary to have the general pathologist re-check his slides in order to comb out the fact that bronchogenic carcinoma was the primary source (Fig. 6).

*CASE 6. Summary:* Gradual onset of symptomatology of loss of weight, psychotic manifestations, chest x-ray findings of lesions suggesting tuberculosis. Cause of cerebral manifestations unsuspected and undiagnosed. Autopsy findings of pulmonary lesion thought to be fibro-caseous tuberculosis. Microscopic diagnosis of cerebral metastasis of bronchogenic carcinoma, primary source right lung.

*History:* G. W. V., a man, aged 59 years, was admitted to hospital August 30th, 1946, with a history of having been in numerous hospitals for diagnosis and treatment. In March, 1946, he began to lose weight rapidly and in May he showed anxiety, refused to eat, was nauseated and vomited frequently. At several hospitals they considered his loss of weight due to a tuberculous lesion in the right lung. He became grossly disoriented and at another hospital the neurologic examination revealed ataxia on the left side and general hyper-reflexia. X-ray of the chest showed extensive infiltration of the right upper lobe "typical of an old pulmonary tuberculosis." The diagnosis made at this hospital was "senile psychosis complicated by toxic psychosis with pulmonary tuberculosis."

*Examination:* The patient was incontinent of bowel and bladder, completely disoriented and his speech was incoherent and irrelevant. He required tube feeding.

*Laboratory data:* X-ray of the chest showed an extensive infiltration involving the greater part of the right lung with cavity formation opposite the second and third interspaces. This was thought to be tuberculous pneumonia (Fig. 7). Sputum examination failed to show acid-fast bacilli. There was a white cell count of 13,300. Blood sedimentation rate was 17.5 mm. in 60 minutes.

*Course:* The patient declined rapidly and died October 13th, 1946.

*Postmortem findings:* The brain was swollen and the leptomeninges showed numerous scattered discrete milium nodules measuring about 1 mm. in diameter. The leptomeninges at the base were clear. There was a softening involving the left temporal pole. There was a firm nodule over the right occipital lobe surrounded by small petechial hemorrhages. The right lung at autopsy was strongly suggestive of fibro-caseous tuberculosis.

*Histologic findings:* The brain showed numerous areas of metastatic groups of epithelial cells arranged in acinar and pseudoglandular formation. These cells were largely columnar and some were cuboidal in shape. The morphologic structure and configuration of the cells was that of metastatic bronchogenic carcinoma (Fig. 8). The microscopic examination of the lung tissue which had been considered tuberculous revealed bronchogenic carcinoma.

*Comment:* The onset of this individual's illness was characterized by loss of weight with subsequent development of mental symptoms which had been diagnosed as senile or toxic psychosis. X-ray studies of the lung had revealed lesions suggestive of tuberculosis and the whole clinical picture evidently had been based on these findings together with the age of the patient which might have suggested degenerative cerebral changes. It was not until the brain had been studied histologically that the real nature of the lesions had been found and the general pathologist likewise found the primary source of the metastatic brain lesions to be bronchogenic carcinoma. It is interesting to note that the general pathologist considered the pulmonary lesions on gross inspection to be fibro-caseous tuberculosis.



**CASE 7. Summary:** A. S., male, aged 73 years. Recurrent attacks of hemiparesis and partial stupor in an aged male with subsequent hemiplegia and stupor considered due to cerebral vascular disease and cerebral hemorrhage. Increasing neurologic signs and high intracranial pressure led to consideration of a space-taking intracranial lesion possibly metastatic malignancy. No evidence during life of a primary lesion. Necropsy findings—solitary metastatic bronchogenic carcinoma to brain—metastatic bronchogenic carcinoma to liver and adrenal. Primary source bronchogenic carcinoma.

**Comment:** Recurrent bouts of hemiparesis with recovery in an aged individual presenting cardio-vascular disease indicated the most likely diagnosis of cerebral vascular disease and the rapid development of a hemiplegia with stupor led to the consideration of a cerebral vascular accident. Only with evidence of extremely high intracranial pressure was the diagnosis of an intracranial tumor entertained. The necropsy findings showed a solitary cerebral space-taking lesion secondary to bronchogenic carcinoma. There was no evidence during life of a malignant process (Figs. 9, 10).

#### MAMMARY CARCINOMA (4 CASES)

**CASE 8. Summary:** S. M., woman, aged 40. Recent onset of cerebral symptoms of headache and cranial nerve defects subsequent to mastectomy for carcinoma two and one-half years before. Terminal phase of mental disturbance. Considered as cerebral metastasis. Necropsy disclosed general carcinomatosis of the body with tumor nodules in the cerebellum.

**Comment:** A relatively recent mastectomy for carcinoma with subsequent symptoms of headache and cranial nerve defects led to early consideration of cerebral metastasis. Roentgenographic evidence of metastasis to the lungs and base of the skull substantiated the metastatic etiology of the neurological symptoms. The terminal symptom of dysphagia was interpreted as due to metastatic invasion of the periesophageal lymph nodes. The symptom of hoarseness can be explained by metastatic involvement of the recurrent laryngeal nerve or pressure upon it by involved cervical lymph nodes. The final episode of mental disturbance could not be accounted for by carcinomatous invasion of the cerebrum since this was absent. The ganglion cell changes secondary to the toxic phase of the general carcinomatosis may be the explanation for this aspect of the clinical manifestations.

**CASE 9. Summary:** M. U. G., woman, aged 29. Treatment of breast tumor with roentgen-ray. Symptoms of headache, root pains and pain in spine. Considered as possible metastasis to spine. Cerebral involvement not diagnosed. Laparotomy for vomiting and severe abdominal pain; negative. Necropsy findings of metastatic invasion subarachnoid space; breast carcinoma and metastasis to liver and lymph nodes diffusely.

**Comment:** This young woman had been known to have a mass in one breast which was considered malignant and also had diabetes mellitus. The presenting complaint of headache evidently was disregarded as a sign of possible metastasis to meninges or brain whereas the chest and spine pains were thought of as metastasis to the vertebra and spinal roots. The complicating parotitis and abdominal pain drew attention away from the likelihood of cerebral involvement. The histologic evidence of subarachnoid metastatic invasion explains the symptom of headache. Intravascular malignant cells in the pial vessels showed the nature of spread from the original focus in the breast to the brain.

**CASE 10. Summary:** Progressive unilateral involvement of cranial nerves one year after thyroidectomy and removal of "tumor" of right axilla; diagnosis of metastatic

carcinoma (thyroid?) to pons and medulla; necropsy findings of general carcinomatosis to skull, brain and numerous body structures; primary adenocarcinoma of axillary accessory breast.

**History:** C. S., a woman, aged 42 years, was admitted to hospital July 8th, 1945, with the diagnosis of metastatic carcinoma involving the pons and medulla. She had been well until 1942 when she developed symptoms of hyperthyroidism. In June, 1944, partial thyroidectomy was performed and at the same time a tumor was removed from the right axilla. The thyroid was thought to be probably cancerous. She subsequently developed cervical pain, strabismus, facial and lingual paralysis, dysarthria, dysphagia, weakness of neck muscles and loss of weight.

**Examination:** The patient was unable to speak above a whisper, could not flex or extend the head, had a right internal strabismus, had double vision, weakness right side of face, tongue protruded to the right. Thyroid not palpable.

**Laboratory data:** Hematologic and urinary findings within normal. X-ray of chest and skull negative.

**Course:** There was a progressive downhill trend, with parotitis intervening on July 16th, 1945, which responded to roentgen-ray therapy; terminally, coarse tremors of both hands appeared and she succumbed on July 19th, 1945.

**Postmortem findings:** The brain revealed a dislocation of the brain stem to the left with compression of the right fifth cranial nerve due to a tumor mass adherent to the dura on the right side. Section of the brain revealed multiple metastatic lesions of the cerebrum. The general autopsy showed diffuse carcinomatosis, primary in axillary accessory breast; metastasis to occipital bone, dura, pleura, pericardium, peritoneum, liver, kidney, ovaries and lymph nodes.

**Histologic findings:** Metastatic adenocarcinomatous nodules were found throughout the cerebrum, cerebellum and brain stem, and subarachnoid space (Fig. 11). The choroid plexus of the fourth ventricle was invaded and the left foramen of Luschka was occluded. The microscopic study of the body organs showed primary adenocarcinoma of the axillary accessory breast, thyroid adenoma—not malignant, secondary metastasis to the organs listed above resembling the primary lesion.

**Comment:** The appearance of progressive unilateral fifth to twelfth cranial nerve defects subsequent to the removal of a supposedly cancerous thyroid gland and a tumor of the axilla justified the diagnosis of metastatic malignancy to the posterior fossa. Histologic study disclosed the true primary source as originating from the aberrant breast tissue in the right axilla. The remarkable clinical aspect was the focalizing of unilateral cranial nerve involvement due to the carcinoma en plaque and the absence of other phenomena in the face of widely scattered cerebral lesions.

**CASE 11. Summary:** L. B., woman, aged 34 years. Known mammary carcinoma with metastasis to lungs, neck, brachial plexus; mesencephalic tractotomy for pain. Subsequent signs of cerebral involvement. Necropsy findings of diffusely scattered nodules of metastatic carcinoma of the brain.

**Comment:** This individual was known to have cancer of the breast with metastases to the lungs, neck and brachial plexus. The admission diagnosis included metastasis to the brain and the clinical course and necropsy findings substantiated this.

#### HYPERNEPHROMA (2 CASES)

**CASE 12. Summary:** Abrupt onset of hemiplegia and coma in a 64-year-old woman with history of marked hypertension accompanied by headaches and visual disturb-

ances. Left nephrectomy 12 years before had shown hypernephroma. Clinical diagnosis of cerebral vascular accident. Gross pathologic diagnosis of cerebral hemorrhage. Histologic diagnosis of metastatic hypernephroma to brain; metastatic hypernephroma right kidney and right adrenal.

**History:** E. A. P., a woman, aged 64, was admitted to hospital August 30th, 1938, in coma and with a left hemiplegia. For several months preceding this she had severe headaches with blurred vision and diplopia. She was put to bed because of marked hypertension, the systolic pressure having been over 230 mm. Hg. since January, 1938. In December, 1925, the left kidney had been removed and tissue study showed a hypernephroma. Had been well until 1938.

**Examination:** The patient was extremely obese and was stuporous. There was a left flaccid hemiplegia. Blood pressure: systolic—130 mm. Hg., diastolic—76 mm. at time of admission, later rose to systolic—160, diastolic—76. An enlarged right kidney was palpable. Spinal puncture revealed pressure of 390 mm. C. S. F. The attending internist observed "interesting to note there was no metastasis for over 12 years—present episode definite left hemiplegia due to right cerebral accident." The consulting neurologist believed the etiological factor to be either vascular thrombosis or hemorrhage. The possibility of a hypernephroma of the right kidney with metastasis to the lungs and brain was thought of only as a remote one.

**Laboratory data:** Urinary findings showed trace of albumin; hematologic studies were normal except for a moderate leucocytosis. The spinal fluid studies were normal. X-ray of lungs was normal.

**Course:** During the six days in hospital the patient could be made to respond only to painful stimuli and had labored breathing. Death occurred on September 6th, 1938.

**Postmortem findings:** The brain showed softening of the centrum ovale and internal capsule on the right side contiguous to a large, fairly well-organized blood clot which extended well into the occipital lobe. This lesion was well circumscribed. The gross diagnosis was cerebral hemorrhage with moderate arteriosclerosis; tumor of right kidney; tumor of right ovary; tumor of right adrenal.

**Histologic findings:** There was a fairly well circumscribed highly vascular tumorous mass in the right hemisphere lying just superior to the lateral ventricle occupying the centrum ovale of the parietal lobe and extending caudally into the occipital lobe. The tumor was surrounded by a modified capsule of connective tissue strands. The tumor consisted of loosely arranged cellular elements and numerous blood sinusoids of varying sizes. The cells were arranged in strands, ribbon-like bands and others coiled in acinar formation. The nuclei of these cells were roundish and the cytoplasm had a foam-like appearance. A diagnosis of metastatic hypernephroma was made (Fig. 12). Microscopic examination of the right kidney revealed hypernephroma with hemorrhage. The right adrenal showed metastatic hypernephroma; right ovary fibroma with myxomatous degeneration.

**Comment:** The age of this patient, the known history of extended hypertension and the abrupt onset of hemiplegia with unconsciousness led to the acceptable diagnosis of a cerebral vascular ictus. An astute clinician discounted the possibility of metastatic hypernephroma because of a twelve-year interval of good health. The high C. S. F. pressure had been interpreted as that commonly found in hypertensives and an intracranial neoplasm was not considered the cause. The gross appearance of the brain resembled a circumscribed hemorrhage and it was not until histologic studies of the brain were done that the characteristic appearance of a metastatic hypernephroma was seen.

**CASE 13. Summary:** H. G., man, aged 48 years. Rapid

onset of personality changes, aphasia, hemiparesis; original diagnosis cerebral hemorrhage or hysteria, subsequent neurologic and ventriculographic findings of left cerebral neoplasm; craniotomy; tissue biopsy findings of metastatic hypernephroma.

**Comment:** The history in this case of personality changes over some period of time and the fairly abrupt onset of partial aphasia led to the early consideration of hysteria and, in view of the hypertension, cerebral vascular hemorrhage. The findings in hospital of hypertension, bloody spinal fluid and the neurologic evidence of a fairly extensive lesion at first was thought to be due to a cerebral hemorrhage. However, the increasing intracranial pressure and neurological phenomena suggested an expansile space-taking lesion which, upon exploration, revealed a necrotic hemorrhagic tumorous mass, tissue study of which showed it to be a metastatic hypernephroma.

#### EMBRYONAL CARCINOMA KIDNEY (1 CASE)

**CASE 14. Summary:** H. P., man, aged 63 years. Early symptoms of abdominal pain and headache in a 63-year-old male followed by mental symptoms considered as "functional"; neurologic evidence of a single space-taking lesion in the right premotor area (area 6); craniotomy and removal of a discrete tumor. Post-operative improvement of symptoms; moderately rapid decline and necropsy findings of an embryonal carcinoma of the kidney with multiple metastases; single cerebral lesion.

**Comment:** The onset of this patient's illness was predominantly gastrointestinal with paroxysmal abdominal pain. The symptoms of headache evidently had been disregarded with the onset of mental hebetude and depression. The latter was considered as evidence of an involutional depression and the patient had been placed in an institution for electric shock treatment. The neurologic evidence of localizing right-sided phenomena and the consideration of the mental phase as of organic origin led to the craniotomy and removal of a discrete tumor. Although malignancy had been suspected numerous studies failed to divulge a primary source. Subsequent findings of a mass in the left loin and craggy involvement of the left epididymis made the likelihood of malignancy more apparent. The necropsy findings of an embryonal carcinoma of the kidney with metastasis to the lungs and most of the abdominal viscera with the exception of the gastrointestinal tract is of interest and importance in view of the symptoms of gastrointestinal pain which was believed originally to be due to the presence of a tumor in area 6 of the pre-motor frontal cortex (Figs. 13, 14).

#### BASAL CELL CARCINOMA-NASAL SINUS (1 CASE)

**CASE 15. Summary:** C. H., man, aged 23 years. Headaches of two months' duration; removal of intranasal tumor identified as basal cell carcinoma; disturbed sensorium, proptosis right eye, right extraocular paralysis, ataxic gait; death within 3½ weeks following nasal operation. Necropsy findings of extensive malignant invasion of right paranasal sinuses, right anterior fossa, meninges and right frontal lobe.

**Comment:** This individual had headaches for at least two months indicating that the malignant process had already invaded the anterior fossa and implicated the meninges before the removal of the intranasal tumor mass. The question as to the route of invasion may be indicated by the extension of the epithelial cells into the meninges and the vessels via vascular and lymph channels. Early x-ray studies of the skull might have given sufficient clues to inaugurate appropriate therapy.

#### CHORIOEPITHELIOMA (1 CASE)

**CASE 16. Summary:** Rapidly developing symptoms and signs of an expansile space-taking lesion in the left hemi-

sphere; operation and removal of a sanguinous lesion; early demise. Necropsy findings of numerous hemorrhagic metastatic lesions of both hemispheres proving to be chorionepithelioma. Metastatic involvement of many bodily organs with chorionepithelioma.

*History:* L. T., a woman, aged 38 years, was admitted to hospital on October 16, 1944, with the history of onset of weakness in the right arm and dizziness two weeks before. This progressed rapidly and within a week she was paralyzed on the right side of the body and was unable to speak. She was delivered of a normal baby four months previously.

*Examination:* The patient was stuporous; there was moderate choking of the discs, right facial weakness, hyperactive tendon reflexes on the right. The diagnosis at this time was a "rapidly expanding lesion in the left motor area and temporal lobe, possibly intracerebral hematoma or neoplasm."

*Course:* On October 17th an exploratory craniotomy was performed which revealed an "organizing intracerebral hematoma in the Rolandic area" which was shelled out. Histologic study of this tissue showed it to be a hemorrhagic neoplasm, diagnosed as gliosarcoma. Patient rallied after operation and repeated spinal punctures at daily intervals showed pressure varying from the original one of 480 mm. C. S. F. on October 17th, 1944, to 150 mm. C. S. F. on October 26th, 1944. She developed persistent drowsiness and despite a subtemporal decompression on October 20th, 1944, she lapsed into coma and died October 31st, 1944.

*Postmortem findings:* The brain revealed a hemorrhagic defect in the left hemisphere involving the lower limb of the motor gyrus and part of the post-Rolandic sensory area. This was operative as seen by the presence of silver clips. The right hemisphere was swollen and in the centrum ovale there was a circumscribed hemorrhagic tumorous mass measuring 2.1 cm. in diameter (Fig. 15).

Small petechial hemorrhages were found in the pons. The tumor in the right hemisphere was considered metastatic. General body autopsy revealed metastatic lesions in the lungs, kidneys, pancreas and G. I. tract. "A definite primary lesion was not found. However, the history of recent pregnancy and the gross character of the lesions make one suspicious of chorionepithelioma."

*Histologic findings:* The large lesion in the right motor area was hemorrhagic and necrotic around which were aberrant deeply staining cells arranged about vessels. The hemorrhagic mass in the right side was likewise mainly clotted blood surrounded with neoplastic cellular elements. These neoplastic cells were arranged in irregular clumps with finger-like projections into the brain tissue. The individual cells were cuboidal with small vesicular and at times solid nuclei, and finely granular somewhat vesicular cytoplasm interspersed with multinucleated cell masses simulating chorionic syncytium. Mitotic figures were frequent (Fig. 16). Diagnosis: metastatic chorionepithelioma to both cerebral hemispheres. The microscopic examination of the body organs showed metastatic chorionepithelioma to the lungs, kidneys, spleen, pancreas and G. I. tract.

*Comment:* Rapid development of a right hemiplegia, loss of speech and stupor led to the diagnosis of a space-taking lesion in the left motor-temporal area. Recent child-bearing was not considered significant. However, in the light of the autopsy findings and the histologic appearance of the disseminated lesions it had a distinct relationship despite absence of malignant involvement of the generative organs.

#### SARCOMA (1 CASE)

*CASE 17. Summary:* A. H., man, aged 20 years. Spindle-cell sarcoma of right maxilla of nine years' duration. Terminal phase of cerebral involvement with mental con-

fusion, vomiting and blindness. Necropsy findings of sarcomatous invasion of the right frontal lobe, brain abscess and focal purulent meningitis.

*Comment:* Cerebral symptoms developed late in this individual who had had a sarcomatous growth of the right maxilla removed nine years before. The process invaded the base of the skull by way of the paranasal sinuses, penetrated into the frontal lobe implicating the optic nerves and chiasm en route. The purulent meningitis and cerebral abscess formation were complications arising from the infection brought in via the sinuses.

#### CARCINOMA OF UNDETERMINED ORIGIN (1 CASE)

*CASE 18. Summary:* Moderately rapid development of evidence of a primary cerebral tumor over a period of one and one-half months. Necropsy findings of metastatic carcinoma.

*History:* A man, aged 44 years, was admitted to hospital the latter part of June, 1937, with a history of having struck the end of his spine as the result of a fall in August, 1936. A week before admission he complained of severe headache and pain in the lower portion of the spine. He had had frequent urination with dysuria.

*Examination:* General physical examination was grossly negative. The deep tendon reflexes were hyperactive throughout and ankle clonus could be obtained on the left side. Fundus examination revealed beginning choked disc. A clinical diagnosis of cerebral neoplasm of the right fronto-parietal area was made.

*Laboratory data:* Hematology revealed a moderate leukocytosis; blood chemistry normal; serology negative. Spinal fluid pressure on August 11th, 1937—45 mm. of Hg. Normal cerebrospinal fluid chemistry. Urinalysis showed presence of albumin and red blood cells.

*Course:* During stay in hospital there was progressive evidence of a rapidly growing neoplasm of the right hemisphere and on August 13th craniotomy was recommended. The patient's condition was poor and he died August 20th, 1937. Complete autopsy was not permitted and a portion of the brain was obtained for diagnosis.

*Histologic findings:* The section of tumor removed revealed a hemorrhagic neoplasm the cellular portion of which consisted of groups of epithelial cells arranged in clusters surrounded by a feeble connective tissue capsule. The tumor cells were large, square-shaped, containing small nuclei and were typically epithelial. Diagnosis—metastatic carcinoma of the brain.

*Comment:* There was nothing in this patient's history to indicate the presence of a primary carcinoma and the neurological survey and the patient's progress seemed to indicate the presence of a rapidly growing primary tumor. The real nature of the cerebral neoplasm was not disclosed until brain tissue was obtained at autopsy.

#### DISCUSSION

Of the 18 cases of metastatic carcinoma to the central nervous system presented here, 13 were not definitely diagnosed during life. The character of onset with respect to the time element and the age group involved conditioned the majority of the clinical diagnoses in the category of some form of ictus secondary to cerebral vascular disease. This tendency can readily be understood when considering the ages of the patients in whom this diagnosis had been made. Thirteen of the 18 patients were 40 years old or beyond, 11 being in the peak cancer years of 40 to 65. The youngest was 20 years old and the oldest was aged 77 years. Male involvement predominated with 11 of the 18 cases being

of this sex, or a ratio of almost 2-1. Most investigators have commented on the greater frequency in males and Globus and Meltzer<sup>9</sup> reported a ratio of exactly 2-1 in their series of 57 cases.

Neurologic symptoms and signs were present in all 18 patients, the onset being abrupt in 14 and moderately rapid in progression in four. The symptoms and signs encountered were both focal and diffuse. There were no specific symptoms or group of symptoms which would identify the etiologic source of the disease. Indeed, the one characteristic feature about the symptomatology was the conspicuous lack of definite characteristics. No effort will be made here to tabulate the frequency of presenting symptoms since this has been adequately done elsewhere.<sup>3, 9, 21, 27</sup> The patients in this series, illustrating the diversity of symptomatology, showed as the foremost symptoms and signs the following—headache, varying degrees of intensity of monoplegia, hemiplegia and paraplegia, vertigo, nystagmus, mental disturbances of mild to profound degree, single or multiple cranial nerve defects, vomiting, abdominal pain, blindness, aphasia, meningeal signs, incontinence of bowel and bladder, diabetes insipidus, choked disc, and peripheral nerve involvement. The presence of choked disc and increased intracranial pressure *per se*, without antecedent historical data, present physical findings and laboratory data indicating the possibility of malignancy, offered no clue to the possible existence of metastatic malignancy to the brain. This is illustrated in Case 2 wherein both factors were present and the diagnosis of meningo-encephalitis was first considered because of the over-all picture of vomiting, lethargy and meningeal signs.

As has been reported in the literature, increased intracranial pressure and choked disc are not constant findings and appear in only a moderate number of cases. Of the patients reported here who had spinal punctures performed, eight showed increased intracranial pressure and only four had choked disc. As evidence of the non-specificity of clinical aspects, four patients were operated on and craniotomy recommended in a fifth, upon the premise that a space-taking lesion was present. In one, Case 14, a solitary tumor was successfully removed which proved to be metastasis from an embryonal carcinoma of the kidney. This patient survived operation by almost two months, death being due to general carcinomatosis and toxic reaction. The illustration (Fig. 13) of the sectioned brain shows a well-healed scar at the site of tumor removal. In Case 4 craniotomy was performed, no tumor mass being found, and a biopsy study of the softened, congested brain tissue revealed metastatic bronchogenic carcinoma. The survival period after operation in this patient was 16 days. The patient described as Case 12 likewise showed at

operation a softened, discolored brain, study of removed tissue presenting the microscopic appearance of hypernephroma. The survival period following operation was 10 days. In Case 15 exploratory craniotomy disclosed a hemorrhagic tumorous mass which was removed and the patient survived operation 14 days. The necropsy findings showed multiple lesions in the brain.

From the foregoing it will be gathered that in metastatic lesions to the brain, even though they be solitary lesions, the survival period is relatively short and does not warrant operative interference, especially when general metastasis has intervened. It is true that malignancy was not suspected in three of these cases operated on, and was considered in only one during the course of the patient's stay in hospital. Craig, Woltman and Kernohan<sup>29</sup> have stressed the importance of complete physical and laboratory examination of the patient who is to have a craniotomy performed, and cited cases of patients who at operation were found to have metastatic malignancy of the brain, secondary to primary lesions in the lung later found at autopsy. This admonition was a belated one since many of their cases had not been suspected of having carcinoma.

It is of interest to note that in Case 14 the symptom of abdominal pain, as evidence of involvement of area 6 of the pre-motor cortex, in conjunction with forced grasping and mental symptoms was utilized as a diagnostic sign-post. The symptom of abdominal pain occurred in three patients. Diabetes insipidus was an important feature in Case 1 and histologic studies showed metastatic involvement of the posterior lobe of the pituitary body and of the hypophyseal stalk. Although an *a posteriori* conception in this case one must bear in mind the *a priori* suggestion of Fink,<sup>30</sup> who said, "When polyuria develops in a case of malignancy it is almost a pathognomonic sign of a metastasis in the posterior lobe of the hypophysis." Diabetes insipidus as a sign of metastatic involvement of the supraoptico-hypophyseal system has been amply attested by the reported cases in the literature.<sup>31</sup>

It is not always possible to distinguish the presence of a primary intracranial neoplasm from a metastatic tumor, even though the latter is supposedly characterized by the inauguration of acute or rapidly developing, poorly-localized signs in association with mental disturbances, as has been called to attention by Grant,<sup>34</sup> and Globus and Selinsky.<sup>32</sup> Many of the patients reported here presented the aspects of an acute vascular ictus, or those of a so-called tumor apoplexy. Another consideration of significance is the fact that the neurological examination may adduce evidence of a single lateralizing lesion whereas necropsy findings

reveal multiple metastatic lesions of the brain. Of the 18 cases, single lesions were found in six and multiple lesions in twelve. In all 18 cases the brain or meninges were involved and the spinal cord was implicated in one case. The patient in whom the spinal cord was involved presented the question of the relationship of trauma to the onset of symptoms. In this patient (Case 3) the symptomatology came on abruptly following heavy lifting and the development of spinal cord symptoms resembled most clearly that of a rapidly ascending myelitis. The ascent of sensory levels and the development of motor disturbances was similar to the cases reported by Spiller<sup>23</sup> and Winkelman and Eckel.<sup>13</sup> Cerebral symptoms were not present despite the presence of metastatic nodules in the occipital lobe.

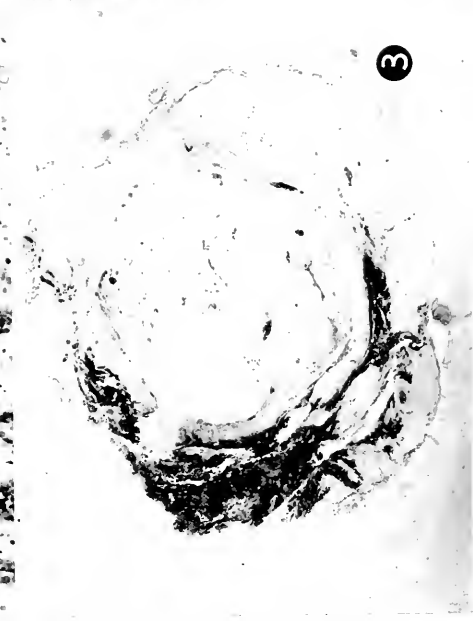
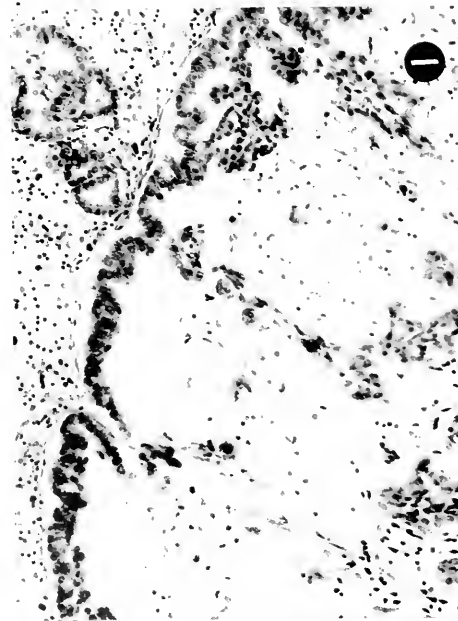
The information obtained from laboratory and roentgen-ray studies does not always give the necessary data in concluding that malignancy exists in the patient; indeed, it may sometimes be misleading as were the roentgen-ray reports in four of the patients reported here. In Case 1 the pulmonary findings were interpreted as an inflammatory consolidation; in Case 2 pulmonary tuberculosis was suspected; Case 4 was reported "enlarged tracheobronchial lymph nodes secondary to tuberculosis"; the chest films in Case 6 (Fig. 7) were found to be "typical of an old pulmonary tuberculosis"; and in Case 7 the x-ray report of the chest was "negative." This is not unique to this series, as witness the reported cases of Craig, Woltman and Kernohan,<sup>29</sup> King and Ford<sup>24</sup> and Globus and Meltzer.<sup>9</sup> Moreover, the gross autopsy findings likewise may tend to direct attention away from carcinoma. The report of the gross necropsy findings of the lungs in Case 6 was pulmonary tuberculosis, and the gross appearance of the cerebellar lesion in Case 5 (Fig. 6) was suspected tuberculous abscess. The histologic findings in Case 4 showed fibro-caseous tuberculosis, fibrosis and anthracosis, in addition to bronchogenic carcinoma. It is apparent, therefore, that two or more morbid processes can co-exist and this possibility must be kept in mind.

Hematologic studies alone offer no conclusive evidence of the presence of malignancy, even serum phosphatase (acid and alkaline) being at times fickle and blood sedimentation rates being rapid in many conditions other than malignancy. Cytologic and chemical studies of the cerebro-spinal fluid in the cases reported here gave no information different from that which would be expected in cases of primary brain tumors, cerebral vascular disease, hyperpirosis and degenerative cerebral diseases. Shannon and Morgan<sup>34</sup> in a study of the cerebro-spinal fluid in metastatic tumors of the brain concluded that the protein content of the cerebrospinal fluid alone does not differentiate a metastatic

growth from a primary one. The other routine laboratory studies performed in the cases here presented yielded no facts leading to a consideration of malignancy.

Much of the inadequacy of the laboratory being of aid may be laid at the door of the clinician because of failure to repeat at frequent intervals, complete x-ray studies of the possible primary seats of malignancy and evidence of secondary metastasis, hematologic studies, and gastric analyses. Biopsy study of suspected tissues obtained by the various forms of endoscopy may in some cases give information of value. The neuropathological laboratory was of assistance to the general laboratory in Case 5 in determining the presence of and the type of malignancy. The general pathologist had not reported carcinoma of the lung and was prompted to reexamine the lung tissue and then discovered the primary source as bronchogenic carcinoma.

As will be seen in Figs. 1, 3 and 10, the metastatic lesions from the lung reproduce clearly, and sometimes more characteristically, the structure of the primary source. This does not obtain in all types of metastatic lesions, however, and not at all times in metastatic bronchogenic carcinoma. The metastatic hypernephroma in Case 12 showed the same structure as the primary source in the kidney and was diagnosed as such by the examiner. The question as to the original site of the chorionepithelioma in Case 16 may arise in view of the fact that the uterus and ovaries were free of malignancy. The general pathologist was of the opinion that the preceding pregnancy and the widespread metastasis favored the conclusion that the cerebral lesion was a secondary one. Moreover, there were multiple hemorrhagic lesions in the brain which were more likely to be secondary rather than primary chorionepithelioma. Davidoff<sup>35</sup> reported a case of primary chorionepithelioma of the pineal gland in a 9-year-old male. General autopsy was not permitted so that the gonads were not examined. A case of primary chorionepithelioma of the diencephalon with metastases to the lungs was reported by Stowell, Sacks and Russell,<sup>36</sup> who believed the lesion arose in the region of the pineal body from a previously existing teratoma. Dockerty and Craig<sup>37</sup> presented a case in which cerebral metastasis occurred four years after hysterectomy, with pathologic proof of the original site of origin and the metastasizing tissue. Their case is another in point with Case 12 cited here of the removal of a malignant primary lesion many years antedating the cerebral metastasis. Metastasis from the breast can at times be recognized, and Globus and Meltzer<sup>9</sup> have demonstrated metastatic lesions as being secondary to carcinoma of the thyroid. Hard and fast diagnosis of the primary source of metastasis, from structures other than those just discussed, is often, at best, conjectural.

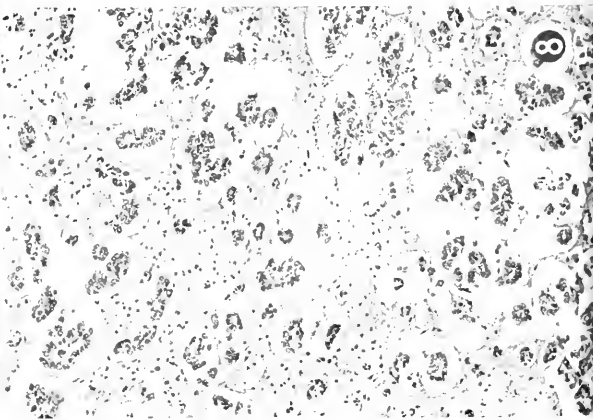
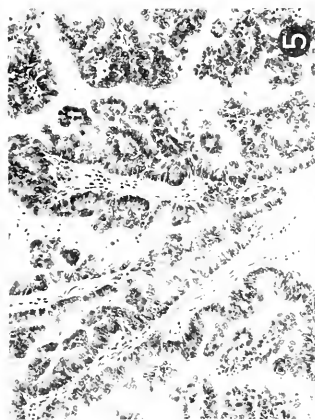
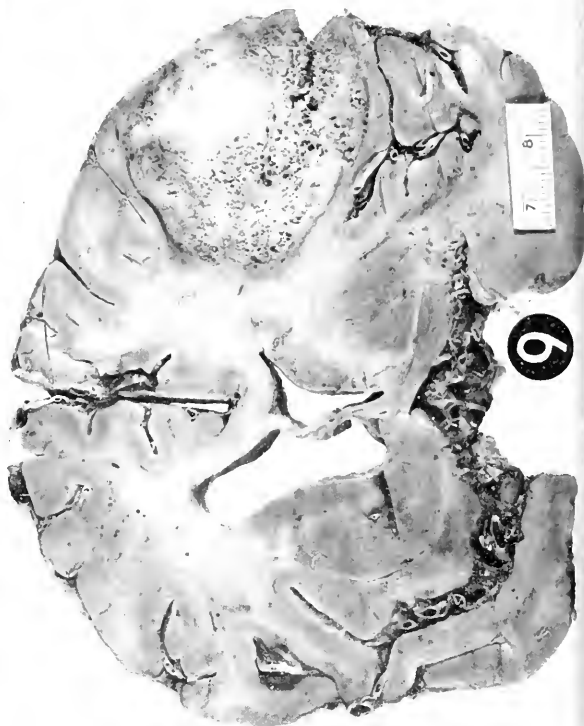
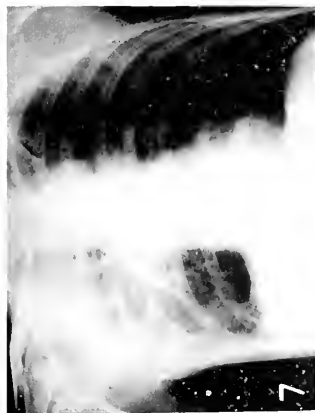


*FIG. 1 (Case 2)* Bronchogenic carcinoma invading Island of Reil area with single layer of columnar cells along the pial margin and extensive invasion of brain substance. Observe the acinar and pseudo-acinar arrangement of cells. T. B. x 150

*FIG. 2 (Case 2)* Clusters of malignant cells adherent to the optic tract and chiasm. T. B. x 150

*FIG. 3 (Case 3)* Section of upper thoracic cord showing metastatic carcinoma (bronchogenic) en plaque with extension into the cord, and complete transverse myelomalacia. T. B. x 11

*FIG. 4 (Case 3)* Finger-like projection of malignant cells into the substance of the cord. T. B. x 150





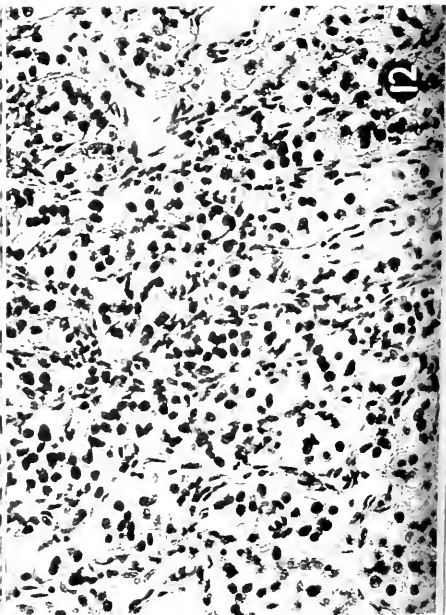
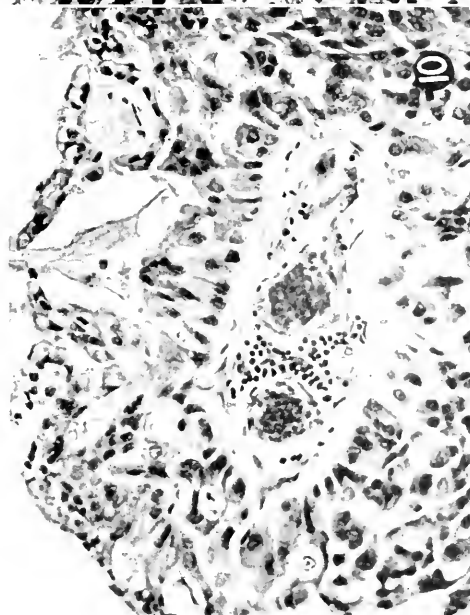
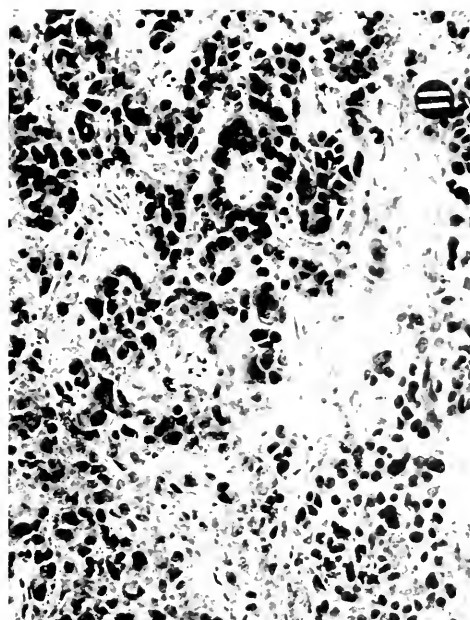
*FIG. 5 (Case 4)* Metastatic bronchogenic carcinoma. Observe the characteristic columnar epithelial cells with hyperchromatic oval nuclei situated at the base, and the branching formation of cell clusters. T. B. x 150

*FIG. 6 (Case 5)* Gross appearance of circumscribed lesion in the left cerebellar hemisphere with caseous necrotic material simulating tuberculous abscess.

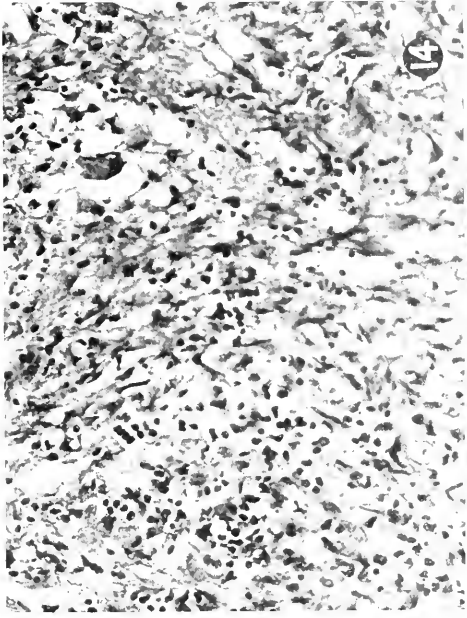
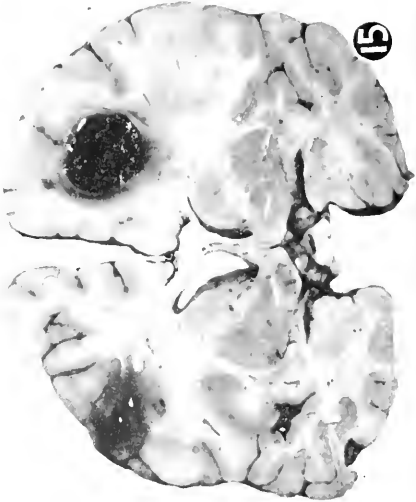
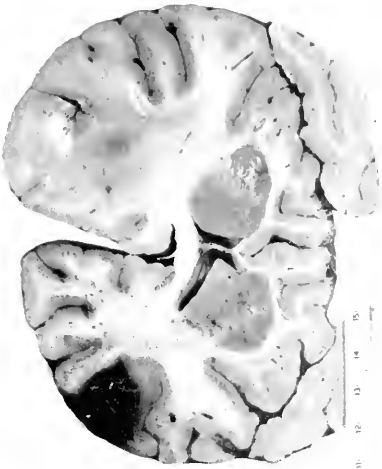
*FIG. 7 (Case 6)* X-ray of chest showing extensive involvement of right lung with cavity formation, considered tuberculous

*FIG. 8 (Case 6)* Diffuse invasion of brain with metastatic bronchogenic carcinoma-primary source from the supposed pulmonary tuberculosis. H & E x 150

*FIG. 9 (Case 7)* Solitary, fairly well-circumscribed metastatic bronchogenic carcinoma involving the right motor and parietal areas. Note enlargement of the right hemisphere and compression of the middle cerebral artery and branches. (Vide recurrent attacks of hemiparesis)



- FIG. 10* (Case 7) Characteristic appearance of bronchogenic carcinoma. The cells are mainly tall, columnar and cuboidal epithelium and at the top of the illustration they are arranged in a secreting glandular formation. H & E x 330
- FIG. 11* (Case 10) Metastatic adenocarcinoma from aberrant axillary breast. The cerebral metastasis was multiple and extensive. Note the glandular arrangement of irregularly oval and cuboidal cells with hyperchromatic nuclei. T. B. x 330
- FIG. 12* (Case 12) Section of metastatic hypernephroma, identical in appearance with lesion in right kidney. Note the ribbon-like arrangement of large vesicular cells with small densely staining nuclei. H. V.G. x 330
- FIG. 13* (Case 14) Healing scar at site of removed tumor. No malignant cells were found within or at the periphery of the scar.



*FIG. 14 (Case 14)* Metastatic embryonal carcinoma of the kidney. The cellular make-up is polymorphous and areas of central necrosis are present. H & E x 330

*FIG. 15 (Case 16)* Multiple hemorrhagic lesions of metastatic chorionepithelioma.

*FIG. 16 (Case 16)* Microscopic appearance of lesions in Fig. 15. There are numerous mitotic figures in all phases in the pale Langhan's cells, and the dark syncytial cells with hyperchromatic nuclei stand out clearly. T. B. x 330

The cases in which a definite etiologic diagnosis was made clinically were those in which a known history of, or existing malignancy was present. Thus the individuals who had had mastectomies performed or who were being treated for breast cancer were, in the presence of neurological signs, readily diagnosed. Moreover, the cases of basal-cell carcinoma and sarcoma of the antrum were known and obvious. Case 12, in which a hypernephroma had been removed twelve years previously, bears the message of cautious diagnosis even in the face of hypertension and what would on the surface appear to be a vascular ictus.

The usual clinical aspects of malignancy were not present in many of the patients reported here, and when they were, they, of themselves, gave no indication of the existent malignant process. Thus in the cases of bronchogenic carcinoma, loss of weight, cough, hemoptysis and pain were not found in the majority of the seven patients. Loss of weight was attributed to tuberculosis in two cases and "aortic aneurysm" in another. The cough in Case 3 was discounted because of its twenty-five to thirty years' existence. Loss of appetite was a more prevalent feature but not constant. In the consideration of malignancy from various organs all the known clinical aspects of loss of weight, cachexia, alteration of bowel habit, loss of appetite, bloody stools, hemoptysis, urinary disturbances, pain, and enlarging masses should be weighed in terms of the history and complete laboratory data. The complete neurological and specific primary diagnosis of malignancy depends, therefore, upon the ability to gather together sufficient historical, clinical and laboratory facts at once, or such findings as develop during the course of the patient's illness.

The question as to the transmission of cancer cells to the brain and spinal cord is an intriguing one and the source of considerable debate in the literature. Winkelman and Eckel,<sup>13</sup> in 1927, cited the contenders for the various modes of dissemination, those considered being lymphatic extension, blood stream transport, and direct extension. The authors showed vessels filled with cancer emboli and suggested that metastatic spread of carcinoma was largely by way of blood vessels. Globus and Meltzer<sup>9</sup> in taking issue with the concept of lymphatic spread emphasized the difference between lymphatic spaces and the Virchow-Robin perivascular system and showed the spread of carcinoma cells via the perivascular spaces. They also stressed the evidence in favor of the blood stream as the main conveyor of metastasizing cells and illustrated this with a photograph of tumor cells within the blood sinuses of the choroid plexus. Case 9 in this series showed cancer cells within the lumen of pial arteries. Malignant cells were also found in the venous side. Batson's<sup>38</sup> recent work

concerning the role of the vertebral veins in metastatic processes throws real light on the spread of carcinoma from the pelvic organs and the breast to the brain and spinal cord.

#### SUMMARY AND CONCLUSIONS

A survey of the literature regarding the incidence of malignant metastasis to the central nervous system indicates a rise in the number of cases reported during the past two decades with a disproportionate rise in metastasis due to bronchogenic carcinoma.

The case histories and pathologic studies of eighteen cases of metastatic malignancy of the central nervous system are presented.

The anatomic distribution and arrangement of the metastatic lesions to the central nervous system consisted of both multiple and solitary lesions, the former predominating.

Of the eighteen cases, seven were metastatic bronchogenic carcinoma, four were metastatic carcinoma of the breast, two were metastatic hypernephroma, and there was one each of metastatic embryonal carcinoma of the kidney, basal-cell carcinoma, chorionepithelioma, carcinoma of undetermined origin, and sarcoma.

The majority of the patients were over forty years of age and came in the age groups most likely to have cardiovascular and cerebral vascular disorders. This, plus other factors discussed, accounts for the failure to establish the correct diagnosis in thirteen patients.

The clinical manifestations in the cases reported here coincide, in the main, with those observed by most authors, emphasis being made on the non-specificity of the symptoms and signs, and the usual introduction of the illness by an abrupt or rapidly progressive onset.

The corollary to such an onset of a symptom or group of symptoms occurring during the apoplexy years is that they should not be taken at face value as being due to a vascular ictus, but should be evaluated only after intensive studies for the possible existence of metastatic malignancy.

Thirty-nine per cent of the patients had bronchogenic carcinoma as the primary source and in the majority of these the roentgen-ray diagnosis was of no assistance and misleading in three instances. Every roentgen-ray report of pulmonary disease appearing in an individual in the peak cancer years who presents neurological disturbances of abrupt onset, should be regarded with suspicion, and repeated studies to establish the presence of malignancy should be made.

Attention is called to the inadvisability of disregarding an antecedent history of operative removal of a malignant focus, because of the lapse of time and the greater likelihood of commoner conditions being present.

The evident need for a greater degree of cancer consciousness is indicated in the consideration of neurological symptoms and signs occurring rapidly in individuals past forty years of age, because metastatic malignancy of the brain and spinal cord is so readily mistaken for other conditions, thus making it incumbent on all of us to avoid the injustice and unwarranted expense to the patient and chagrin to the doctor of treating a patient for something he does not have.

—1813 Delancey Street

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# The Good Doctor\*

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GOODNESS as an abstract virtue, as an isolated attribute of which a human being may partake, can in its isolation command respect and serve as an ideal. It is, however, only when goodness operates through and activates the mind of an individual and influences if not determines his actions that its virtue and its power finds expression as a way of life, a life in good and related form. This goodness of which I speak is not of a moral order. It is assumed that such goodness finds its habitat in the good doctor not for the grace which may be given him by it but for the power as peace and adjustment which it enables him to give to those sick of body and of mind who in days of such distress will care to forget their "foolish ways" for the strength that comes through goodness. Goodness is unconquerable either by man or by disease. The good doctor should be a part of and use this weapon as he lives his life of giving and not of getting. It is the becoming lost in an understanding relatedness with disease and distress in order to dispel it, in order that such ugliness may be dissipated and that beauty may take its place, the beauty of a life in a state of health adjusted to its environment whatever that environment has to be that is all satisfying and sustaining to the good doctor. Goodness other than that of the Absolute as found in the preacher or lawyer or good doctor has to change through time if this goodness is to maintain its relatedness to life. Change is an essential and the most characteristic feature of life. The essential function of the physician is to recognize both the power and the necessity for change and to so relate both himself and his patients to it that an adjustment may be effected without excessive friction and without the loss of those human qualities of friendship, confidant and guide which will ever be essential characteristics of the physician as he grows in understanding for the good of his patient. Change is necessary for any order of progress if that progress is to be of a related and helpful nature. The good doctor has had to change in order to master and apply a progressively increasing amount of highly specialized medical knowledge. He can no longer spend hours with a patient for purposes of observation and interpretation, not because he does not care to, but

because other individuals secondary to the central figure of the physician in charge, provided he has assumed this responsibility, require much time for studies of a specific nature, some of which are necessary, many of which are unnecessary except to increase the cost of medical care. Even with such an appreciation of the time factor necessary for the care of a patient, the doctor-patient relationship has unnecessarily changed. At the present time, all too often it barely exists. It would appear that friendship has no healing power, that the outpouring of a mind in distress from a body which is in real or psychosomatic pain is worthless because it can neither be measured nor titrated and the good doctor as guide has been usurped by technical assistants. Such a loss to the patient is in truth unmeasurable. He has become deprived of a natural source for healing, a hippocratic way of getting well and the physician has lost in the disrupted relationship a Something that once made of him the noblest of human beings. This doctor-patient relationship with all of its frankness and sacred ramifications was once the heart and too much the head of medical practice. It had to become modified as a change for exact knowledge, but no mechanical substitute can take its place. An encephalogram will not reveal a disrupted home from a drunken husband and an electrocardiogram will not indicate by inverted T waves the nagging of a socially minded wife. One may yet turn to his lawyer for advice and guidance, to his minister for another type of help, but it is indeed becoming rare for a sick human being to be able to turn to his good doctor for another order of sustained interest and guidance. Personality has become lost in mechanics. The sick person is mechanically shot by elevator and wheel chair to a series of stations manned by individuals, who, not infrequently through high arrogance have designated themselves specialists, six weeks, not six years specialists. These interested individuals card index their segments of the sick individual's ailment and he journeys by wheel and by lift to another station. The director with stethoscope in pendant array in haste and not in poise and reflection, percusses and auscultates and the chair which is now firmly established on the production line moves on. It cannot stop for conversation and a turning out of the individual for an explanation or a confession. Such very necessary pauses would stop production. Fur-

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thermore, it must be remembered, this diagnosis must be obtained by a so-called scientific method, through mechanism, and that the patient's story, his feelings even though they are his, have nothing to do with obtaining a truth which must be designated scientific. Such an approach to an illness without the good doctor as the responsible agent in the undertaking may place financial compensation first, create too great an interest in the autopsy findings and allow too much time for intellectual adventures on the golf course. Who is it that is responsible, seriously responsible as life and death are responsible, for the sick person? Who is his good doctor, his father confessor, his guide as an adjuster in such periods of mental and physical maladjustment? The sick individual seeks a physician in order to be healed—an old concept and one which will never die. No more sacred communion can exist than that which should find its place between the sick and the healer. No more satisfying life has ever been found than to become lost in order to save some one in distress. What becomes of the savior or what did become of the Savior should be of very minor concern. The latter created a good way of life.

If the doctor-patient relationship which has been under discussion was and is so essential, why should it have changed, and what has taken its place? The main reason for the change is that medicine during the past forty years has passed from an art which was abounding in ignorance to an applied science which through research becomes more and more of an exact science even in the living, changing organism in which it has to operate. Scientific methods of an analytical order have usurped but should not have eliminated hopefulness, sympathy and even wisdom of a general order of usefulness. There is no clash between these attributes as they should be found in the good doctor. The science in the equation offsets the sloppiness of sentimentality, sympathy and encouragement ease the harshness of the mechanics of science. The pendulum of true progress in medicine has swung too far into the unascertained area of usable scientific adventures. It has overshadowed or even taken the place of thought and judgment on the part of the medical guide. The pendulum must swing back and establish an adjusted equilibrium in which area good doctoring through a necessary amount of scientific data can relate itself for the common purpose of correcting an illness.

The physician who guides a patient through an illness is, and should be recognized as, responsible for the patient. He should indicate as a result of his intimate knowledge of and thorough study of the sick individual what should be done of a laboratory order and through the aid of specialized talent, to make him, the physician in charge, the

individual responsible to the sick one, able to come to a conclusion as to the nature of the malady and then proceed with his science and his art to heal him, cure him or so modify his ailment that some order of readjustment towards a normal type of life will be possible. Too much emphasis cannot be placed on obtaining an accurate diagnosis. Too little emphasis is frequently placed on a serious, thoughtful consideration of those measures embraced by the word treatment which has as one of its functions such a modification of harmful symptoms and even the actual processes of disease that the yearning of tissues to establish a state of adjusted purposefulness as a balanced and related life may be effected. It is here that thoughtfulness and time work in unison for change as a hipocratic order of medical practice. Forty years ago we very largely worked in the dark. Medicine as an art had but slight scientific illumination. Now, in order to claim we are scientific, we make ourselves work in so much light which comes to us from so many angles that our vision is apt to become blurred. The illuminated object, the patient, becomes lost in light.

I have an ideal for this good doctor: that his life should be clean and that his methods should be simple, that his goodness of life as such with his wisdom based on scientific understanding should draw the sick to him to be healed in body and in mind, that as he heals them he should sustain them with encouragement and guide them to those plateaus for life where they may best make an adjustment for accomplishment through toil.

In this short statement I may have unintentionally "shot an arrow o'er the house and wounded a brother; if so I am sorry and I ask his pardon." My intention has been, first, to emphasize the necessity for a scientific order of approach to a study of life as such and as disease and, secondly, to more than emphasize, to insist on, both the power and necessity of the medical guide as friend, counsellor and confidant in order that he in truth may be a Good Doctor.

#### EXTRACTS FROM TRANSACTIONS OF THE OHIO STATE MEDICAL MEDICAL SOCIETY, 1896

In the evening, the Society attended a lecture by Professor Benj. A. Thomas, of the Ohio State University. A practical demonstration of the roentgen-ray apparatus and illustrations by lantern slides were presented in a most instructive manner. The practicability of the fluoroscope as an aid to surgical diagnosis was demonstrated, and an attempt was made to locate a fragment of glass imbedded many years ago in the foot of one of the ladies present. A radiograph was taken on the following day.—*Jonathan Forman*.

HOSPITALS.—Beginning about 1880, the physicians and local groups were busy building hospitals in which to do their surgery, but as for the practice of medicine up until 1910, the average citizen of Ohio looked upon the hospital as a place to go to die rather than a place in which to stop his disease.—*Jonathan Forman*.

# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### LIKE AS A FATHER

HANS MAX HAUPT, of Chicago, will serve the remainder of his life in a United States prison; and he will pay, too, a fine of \$10,000. Many months ago he was tried in a Federal Court for sheltering his son, Herbert Haupt, landed on our shores during the recent war from a German submarine. The son was promptly tried, convicted and executed.

In response to the knock on the door, it was opened. The son and the father looked upon each other. The son entered his father's home. Later he was found there by agents of the United States Government. Afterwards his days were few.

I do not know that the father was charged with any other crime than that of sheltering his son, come from far-away hostile Germany. Perhaps the father could have done our country and his no greater hurt than to take into his home a young man, even his own son, who had been sent to our country to participate in its destruction.

Stonewall Jackson's conception of the purpose of warfare was simple—the destruction of the enemy. General Sherman declared that his military march through the heart of the South was to demonstrate to the people that their own government had become unable to protect them. Those two mighty warriors thought the first purpose of warfare was destruction.

A Latin maxim declares that all laws are silenced during warfare. The reference must be to man-made laws, all of which must be sustained by the might of man.

But natural laws and moral laws are immutable and indestructible. David's concern about his son Absalom, risen in rebellion against him, was not about the safety of his great kingdom, but about his problem son. Had the handsome young rebel been brought a captive to his royal father, David would not have permitted him to be executed, imprisoned or fined. Had he done so, he could not have written: Like as a father pitieth his children, so the Lord pitieth them that fear him. And I surmise the translator of today would substitute love for fear. But the lawless laws of warfare regard neither the impulses of the young man nor the affection of the father.

Mr. Justice Murphy expressed the only opinion in dissent from the opinion of his eight fellow-justices. He thought the father's behaviour was

natural and human. Mr. Justice Murphy is a bachelor, a profoundly religious man, long experienced in practice of the law and in the administration of justice.

The father of the executed son, though imprisoned for life and heavily fined, probably experiences no regret for having opened the door of his home to his son.

*Editorial Comment.*—It is natural, also, to murder and steal and lie. The newspaper account which I read said this father praised his son for his treason to this country and aided him to the extent of his ability in carrying out his treason, which, to whatever extent it was successful, caused our loyal citizens to lose their lives.

Most likely the father's only regret for his action is that it was not successful in bringing about the rule of Hitler's Germany over us.

It would have been more revealing to have said that David's concern was not about the welfare, even the lives, of his people. And even Hitler has never been accused of so vile a crime as the book which calls David a man after God's own heart says David committed.

In 2nd Samuel, 11, one may read: "In an evening [David] from the roof saw a woman washing herself . . . . And David inquired . . . . and one said, Is not this Bathsheba . . . . the wife of Uriah. . . . And David sent messengers and took her . . . . And David sent to Joab, saying, Send me Uriah . . . . And in the morning . . . . David wrote a letter to Joab, and sent it by the hand of Uriah . . . . the letter saying, Set ye Uriah in the forefront of the hottest battle, and retire ye from him, that he may be smitten, and die . . . . Then Joab sent and told David . . . . And when the wife of Uriah heard that Uriah her husband was dead, she mourned for her husband . . . . And . . . . David sent and fetched her to his house . . . and she bore him a son."

Read the whole chapter. It contains a description of the most despicable act of perfidy in the annals of time.

It is true that David had the same base ingratitude to loyal, faithful soldiers as Haupt, as well as the same contempt for the lives and fortunes of the many.

But as an exemplar of morality David is but a poor specimen.—*J. M. N.*

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### PERINEPHRITIC ABSCESS

OWING to the fact that most perinephritic abscesses are metastatic—from such common conditions as furuncle, infected wound, tonsillitis, otitis media, or certain infectious diseases—this kind of

abscess is important because of its frequency. Owing to the fact that neglect to give proper treatment promptly may place life in danger, it is important because of its gravity.

The symptoms are not always as plain and suggestive as we would like. They may be misleading. A septic fever may be the only symptom for several weeks, leading up to the appearance of local symptoms when the abscess has fully developed. Pain is then felt in the flank, and the patient may discover for himself a bulge in this region. Pus commonly appears in the urine in quantity and the patient experiences various degrees of discomfort in and between voidings. The thigh of the affected side may be drawn up as a result of spasm of the psoas muscle.

Symptoms are manifested as related to the primary disease in cases occurring as a result of appendicitis or inflammatory destruction in a vertebra or a kidney.

Very helpful objective signs are not to be anticipated early in the development of the condition. Mass in the kidney region is later than tenderness, pain and muscle spasm. Fever and increase of white blood cells usually precede localizing manifestations.

Diagnosis can be made early only by x-ray examination, including pyelography.

This subject is dealt with by Beard in a recent article<sup>1</sup> in which is recommended an incision which appears to have advantages over any incision commonly employed. This incision, which Beard credits Foley with devising for approaching the upper third of the ureter for removal of stone, has given Beard gratifying results in eight recent cases.

Outline of incision.—It is made transversely,  $3\frac{1}{2}$  inches long, over Petit's triangle, midway between the iliac crest and the costal margin. No muscles need be cut or divided. Muscles are separated by blunt dissection, and retracted readily so as to give ample space for dividing the lumbodorsal fascia, and when this is accomplished the abscess is well exposed and can be opened with a finger. The hand may be inserted to break up hidden pockets of pus, and a good view of the cavity, kidney and ureter obtained.

Postoperatively penicillin is valuable in all cases except those following purulent appendicitis with rupture, in which case sulfa drugs and streptomycin serve the purpose better.

1. D. E. Beard, Atlanta, in *Jl. Med. Assn. Ga.*, Feb.

#### BACITRACIN THERAPY

(F. L. Meloney & Balbina Johnson, New York, in *Jl. A. M. A.*, March 8th)

In May, 1943, while searching for evidence of bacterial antagonism in the bacterial mixtures to be found in badly contaminated accidental wounds, we discovered an aerobic gram-positive spore-forming bacillus which produced, in ordinary culture mediums, a powerful antibiotic agent of antibacterial power.

The organism was found in the debrided tissue removed from a compound fracture of the tibia in a seven-year-old girl by the name of Margaret Tracey, hence the "tracin." The crude filtrate was found to inhibit the growth of hemolytic streptococci in the test tube and on blood agar plates, when injected subcutaneously to protect mice against 10,000 or more minimal lethal doses of hemolytic streptococci, and to have an abortive action on furuncles and carbuncles when injected into the center of the lesion.

In 100 cases of surgical infections treated locally with bacitracin a favorable response has been evident in 88% of the general run of local infections seen in office or clinic.

Most of the aerobic and anaerobic cocci found in these infections were susceptible to both penicillin and bacitracin. Thirty were resistant to penicillin and susceptible to bacitracin. Six were resistant to bacitracin and susceptible to penicillin. A few were resistant to both.

None of the gram-negative aerobic bacilli tested was susceptible either to penicillin or bacitracin.

Bacitracin will be of clinical importance only if it can succeed where penicillin or the sulfonamide compounds cannot. Its activity against many organisms of the staphylococcus and nonhemolytic streptococcus groups which are resistant to these agents, seems to be significant.

It is not locally toxic or irritating and is not inhibited by plasma, blood pus or broken-down tissue, or by the organisms which produce penicillinase. It may therefore be of value in infections due to bacterial mixtures.

## DENTISTRY

J. H. GILES, D.D.S., Editor, Charlotte, N. C.

### EFFECT OF APPLICATION OF SODIUM FLUORIDE ON DENTAL CARIES

THE continuous search for means of preventing or controlling dental caries once in a while discovers something of value.

Here in Charlotte the supposed efficacy of adding sodium fluoride to the water supply has been endorsed and it is the plan to put it into effect.

Whether or not enough fluorine can be safely added to our general water supply to materially reduce tooth decay is questioned by many of those who know much about the subject.

Quite another matter is the local application of fluorine to the teeth. A distinctly encouraging report<sup>1</sup> is given in substance.

During a three-month treatment period beginning September, 1943, three groups of Rochester, Minn., school children received a series of topical fluoride applications to the teeth in half the mouth. The children in the first of these three groups received two fluoride applications, the second group received four, and the third received six. Half the children in each group were treated in the left side of the mouth and the other half in the right side of mouth. The teeth in the untreated mouth quadrants served as controls. A dental examination and record of findings was made for each of the 2,016 children participating. The children ranged in age from 7 to 15 years.

The dental examinations were made with mouth

mirror and explorer under artificial light and with compressed air available for use at the examiners' discretion. In each case, only the teeth in the upper and lower quadrants of one side of the mouth were fluoride-treated. The treatment consisted of isolating the teeth with cotton rolls, drying with compressed air, and wetting the crown surfaces with a 2 per cent solution of sodium fluoride. The applied solution was allowed to dry in air for four minutes. The series of fluoride treatments was not preceded by and did not include dental prophylaxis. For each child, a maximum of two treatments was given per week, and the treatments were completed in three weeks or less.

Two years after the series of fluoride applications, the teeth of the children in the three treatment groups were reexamined. Both the initial and subsequent dental examinations were made by one of us (J. W. K.). Although there were initially 2,016 children included in the study, the two-year report presented here is based on the 1,458 cases available for reexamination. Analysis of the data on caries experience is confined to the erupted permanent teeth present in the mouth at the time of the initial examination. The age classification of the children refers to age at the time treatment was given.

The incidence of initial caries in permanent teeth which were noncarious at the time of treatment was 9.3, 20.1 and 21.3 per cent less in teeth treated with two, four and six applications of fluoride solution, respectively, than in untreated teeth.

The numbers of additional permanent tooth surfaces which became carious in teeth which were carious at the time of treatment were 16.2, 9.6 and 22.2 per cent less in fluoride-treated carious teeth given two, four and six applications, respectively, than in untreated carious teeth.

Comparison of the results of this investigation with those previously reported indicates that omission of a dental prophylaxis from the treatment procedure materially reduces the caries-inhibiting effects of the topical fluorides.

1. J. W. Knutson *et al.* in *Public Health Reports*, March 21st.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### AN EVALUATION OF ALLERGY IN GENERAL PRACTICE

THIS PRESENTATION<sup>1</sup> is a non-technical, common-sense approach to the problem. Dimsdale is one of those few specialists who say plainly that most of their problems are entirely within the ability of the G. P. to diagnose and treat.

Almost any structure in the body may be in-

1. L. J. Dimsdale, Sioux City, in *Ill. Iowa State Med. Soc.*, March.

involved. The general practitioner deals with all the variations.

The rhinologist has the problem of vasomotor rhinitis and hayfever. The ophthalmologist that of vernal conjunctivitis and iritis. The dermatologist repeatedly sees eczema and urticaria. The pediatrician manages instances of asthma, eczema and food intolerances. The gastroenterologist deals with innumerable instances of nausea, vomiting, abdominal cramps, or diarrhea—the so-called abdominal migraine—again a manifestation of allergy. In the domain of surgery, the recognition of certain forms of abdominal pain as a manifestation of allergy rather than surgical disease will prevent many a serious diagnostic error. The neurologist is faced with the problem of migraine, and attacks of loss of consciousness are occasionally allergic in origin. The orthopedist needs to distinguish allergic joint conditions. Henoch's purpura, periarteritis nodosa, and ulcerative colitis may have allergic components.

The causes, the diagnosis, as well as the treatment, are essentially the same for all.

Whereas all people react almost identically to most injurious agents, to allergic stimuli, only a few will show any deleterious responses. Why such should be the case is not known. What is known, however, is that the condition is hereditary. The stronger the hereditary influence, the earlier in life are allergy symptoms likely to appear.

Confronted with a case suggesting allergy, what course should one pursue? Although the importance of even temporary palliation should not be underestimated, good medical care desires a more lasting effect. An exhaustive history is the single most important diagnostic aid. Is there a family history of allergy? At what age and under what circumstances did symptoms appear? Are symptoms seasonal or perennial? What aggravating or alleviating influences were noted? Are there any peculiar occupational exposures? Does the patient have cats, dogs or other pets?

Second is a thorough physical examination. All organic disease must be ruled out.

Finally one should do allergy tests. Many patients with suspected allergy are given tests and then treated on a basis of such findings. It is like treating for pneumonia every patient with pneumococci in the sputum. Allergy tests are confirmatory only and are of limited value. One may use scratch, intracutaneous, patch, passive transfer or any of the many other tests. *None is very difficult and all can be performed by any doctor.* The doctor who assumes the responsibility, however, should have a broad understanding of associated botanical information. Tests indicate only whether the skin is sensitive to the allergen applied. The degree and type of skin sensitivity may bear no relationship

to the allergy elsewhere. Under many circumstances, the findings are diagnostic. At other times they are entirely misleading. This is particularly true of tests with food extracts. One may obtain negative tests in the presence of indisputable clinical evidence of guilt, and obtain positive tests with substances which have no bearing on the case. The clinical correlation of the survey findings is the important factor.

The leukopenic index and nasal smears for eosinophils are occasionally helpful. At times all tests may be unrevealing. This is particularly true in the ingestant type of allergy. Here one must employ rigid elimination diets to determine the offending substances.

The real test of the evaluation depends upon clinical verification of the relationship between the suspected allergen and the symptoms produced. If an infant has a chronic dermatitis but no positive allergy tests, yet the former disappears with elimination of milk, orange juice, or what have you, and reappears when ingestion is resumed, the relationship is unmistakable. On the other hand, if the skin tests show positive reactions to timothy yet a patient in Iowa experiences hayfever only in the fall, our knowledge of the fact that timothy does not pollinate during the fall season immediately excludes it as a cause of the symptoms. Many patients are treated with multiple extracts when only ragweed is necessary simply because skin tests showed numerous positives.

Having arrived at a diagnosis and the likely cause, one may expect good but not complete results from treatment. In hayfever, 75 per cent control of symptoms can be expected. Along with the specific therapy, any and all symptomatic medications should also be employed.

If the asthma is being caused by a pet dog, the removal of the latter cures the respiratory distress. If chicken feathers are the cause of a persistent rhinitis, removing pillows from his room may be the answer.

For the large group of allergens that cannot be avoided, control is attempted by desensitization. This consists of administering gradually increasing doses of the suspected allergen. The underlying theory is that the body contains two types of antibodies, those attached to the shock organ and those free, circulating in the blood stream. Desensitization therapy increases the circulating antibodies which in turn neutralize or "block" the arrival of the offending absorbed allergen at the cell surface of the shock organ.

The best procedure for the inhalant group is by hypodermic injections, given perennially. More poor results come from overtreatment than from under treatment. Correct dosage determination must be individualized in every case.

Present information about allergy is fragmentary. The proper utilization of those fragments will give aid to a large group of patients who cannot be controlled in any other way.

Write Dr. Dimsdale for a reprint. Every family doctor should have all that he said in this address, which is as distinguished for candid admissions of the limitations of knowledge on the part of even the wisest specialists, as for proclaiming the competence of the general practitioner to care adequately for the greater number of his allergic patients.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### DIETS IN THE TREATMENT OF DIABETES MELLITUS

RECENT DEVELOPMENTS in our knowledge of metabolism permit diabetic diets to be prescribed on a simpler basis. Fats are no longer thought to burn in the fires of carbohydrates. It is now known that insulin deficiency simply leads to impaired oxidation of glucose. Protein and fats have then to be used disproportionately to meet calorie or energy requirements. While it has been thought that 10 per cent of the fat metabolized and half of the protein requires the use of insulin, it is now uncertain that insulin is required for the metabolism of these fractions. *There is no scientific basis for a diabetic diet other than one resembling a well selected general diet*, with perhaps a moderate reduction in carbohydrate.

The statements in the foregoing paragraph, particularly the last sentence, attracted my favorable notice. This article, by Rundles,<sup>1</sup> goes on in the same vein.

Individual diets are superior to all others. These diets are easily applied; they are easily understood, are pleasing to the patients who use them, and permit accurate diabetic control.

The first step is to learn the foods available at home and the patient's likes and dislikes. Radical changes in dietary habits are ill-advised.

All diets should contain in the day's food a pint or more of milk to provide enough calcium; fresh tomatoes, tomato juice, or a citrus fruit to supply vitamin C; two raw, green leafy or yellow vegetables and at least 60-70 Gm. of protein. After these basic requirements are met, food items should be used in the diabetic diet according to the usual pattern set by family custom and economic factors.

Individual diet prescriptions are made easier by the use of printed charts.

The quantity of protein foods is indicated in terms of egg equivalents, and items within the pro-

1. R. W. Rundles, Durham, in *N. C. Med. J.*, March.

tein, bread-cereal, or fatty-food groups may be interchanged freely.

Absolute quantities in most cases are less important than constancy in amount and distribution of carbohydrate from day to day.

In the case of an obese patient with a gluttonous appetite, it is better to satisfy the food desires, maintain control of the diabetes, and allow the besity to persist. In the treatment of mild diabetes by low-carbohydrate diets without the use of insulin, the meals become unattractive when the carbohydrate content of a 2,000-calorie diet is less than 150 Gm., that of a 3,000-calorie diet below 200 Gm. In some cases the patient may have to decide between less attractive food without insulin and a better diet with insulin.

Every effort should be made to avoid unnecessary restrictions in diabetic diets. Whole wheat bread, enriched white, rye, or even hot breads, if properly estimated as to carbohydrate content, can be used equally well. Fruits and vegetables containing less than 3 per cent carbohydrate—in many cases up to 6 per cent—can be used in virtually any quantity. Black coffee, tea, lemonade made with saccharin, broth, clear soup, and average servings of oysters and clams can also be used without regard to food content. Cold lunches are easily adapted from the allowed food when desired. Bedtime lunches are usually advantageous when protamine zinc insulin is used.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### ELECTRO-SHOCK IN THE TREATMENT OF MENTAL DISEASE

WE LIKE to have frequent evaluations of shock therapy. Our patients ask us about it. Many of them have been promised more than was realized.

A neuropsychiatrist<sup>1</sup> identified with one of our most prominent institutions has something to the point to say.

To Von Meduna, thinking on the fact that schizophrenia and epilepsy very rarely afflict the same patient, came the idea that artificially induced convulsions might influence the course of schizophrenia. After attempting convulsive therapy with several different drugs, he standardized metrazol therapy. Although encouraging results ensued, all was not favorable: convulsive seizures were not routinely obtained; there was a period between the injections and the convulsion during which the patient had fear reactions which caused him to refuse to submit to further attempts; it was impossible to accurately control the severity of the convulsions.

Cerletti and Bini by means of electrodes placed one on either temple, and by the passage of small amounts of alternating current, induced grand mal

seizures at will, instantaneously and without pain or discomfort to the patient.

Complications following electro-shock are only 25 per cent as common as they are following metrazol. All patients undergoing convulsive therapy have increased in appetite and show weight gains of four pounds to 15 pounds in two to three weeks.

Convulsive therapy, originally used in cases of schizophrenia only, was soon found more beneficial in the manic-depressive psychoses and in involutional melancholia.

Let us not be unhappy or discouraged when we are unable to fit one of our patients into a ready-made, formal mental world. Broggi tells us, "a considerable divergence of opinion may occur between well recognized clinicians as to the diagnostic classification of mental patients."

He goes on to offer helpful suggestions:

In manic depressive psychosis, depressed type, results with electro-shock therapy have been most gratifying. Failures have been markedly low. In the manic phase of manic-depressive psychosis failures were found to be due to the technique of therapy; *in the depressed phase* administration should be every second day, until six to 10 treatments have been given; *in the manic cases*, two or three the first day and one or two treatments for the next two or three successive days until a remission.

In dealing with involutional melancholia of the agitated and depressed type, good results have been obtained regardless of the duration.

The results in schizophrenia have not been nearly so favorable. To obtained lasting remissions, 20 treatments are required, and many recommend 30 or 40 convulsive seizures. The best results in schizophrenia are obtained in those cases of less than six months.

Age is a deterrent; yet Broggi had a patient 65 years of age, with a b. p. of 220/130, who has been institutionalized for six years, who following this therapy was able to return to his home to enjoy, it is hoped, the remaining years of his life.

The most frequent complication following electro-shock therapy is subluxation of the mandible. This can be prevented by firm pressure maintained upon the jaw during the whole time of the convulsive seizure. Such dislocations are usually easily reduced before the patient regains consciousness.

Fractures of the thoracic vertebrae have occurred, but did not require orthopedic appliances; recovery following one or two weeks of bed rest. Fractures of the long bones of the humerus and femur have occurred in elderly and heavily muscled individuals.

We may conclude that electro-shock offers far the best hope of doing something for these unfortunate, and be alert to have our such patients be so treated early.

1. F. S. Broggi, Portland, in *Jl. Maine Med. Assn.*, Mar.

## SURGERY

### TEN THOUSAND SPINAL ANESTHESIAS; FIVE THOUSAND WITH EPHEDRINE INTRATHECALLY

THE FIRST of these anesthetics was given in 1928, to a patient 79 years of age, for suprapubic enucleation of his prostate; the 10,000th was given in 1946 for a cesarian operation upon a physician's wife. The first 5,000 records were an average of one per day; the second an average of four per day.

Thus the authors introduce an informative article<sup>1</sup> of vast interest to all doctors.

The early difficulties were due to inability to predict height and duration and safety. It soon became evident that with the use of ephedrine, subcutaneously, it was not always best immediately to place every patent in the marked Trendelenburg position following injection and led to greater controllability and increased duration by injecting larger and still larger doses of novocain dissolved in smaller and smaller bulks of spinal fluid, and allowing the spine to be flat or level until the anesthesia became fixed at the desired height, then slightly elevating the upper thoracic and cervical canal.

Study of these 10,000 records proves beyond doubt that practically every surgical condition wherein this type of anesthesia is not certainly contraindicated can be met with two anesthetizing agents—*novocain* for operations lasting 1 hr. to 1 1/3 hrs or less, and *novocain combined with nupercaine* for surgery extending beyond three hours. Adding small amounts of 1-200 nupercaine solution to the novocain-spinal fluid mixture to be injected, first given clinical trial in 1930, continues to prove satisfactory for long surgery. In this series it was employed 2,118 times.

The use of ephedrine intrathecally was conceived because ephedrine is a mild vasoconstrictor when applied locally, and so prolonged anesthesia should be produced with less dosage of novocain by adding ephedrine. This method was employed in 5,235 consecutive cases. These patients look better on the table and are better. Their pulse and b. p. is sustained; oxygen for anoxia was required less than 1/10th as frequently; and prolongation of the anesthesia with given dosages of novocain is 50 per cent. Also a vasopressor drug slowly absorbed helped to sustain the circulation to the vital centers, and ephedrine hydrochloride is locally anesthetic to nerve roots and trunks.

Practically every surgical condition between the clavicle and the toes is found in this series: 690 of the operations on the gallbladder and its ducts;

1. F. T. Rombertger & F. W. Ratcliff, Lafayette, in *Ill. Indiana State Med. Assn.*, Mar.

138 on the stomach, including perforated gastric ulcers, gastric resections, and gastroenterostomies; and 450 were cesarians.

There were no operating-room fatalities in this series attributable to the anesthesia *per se*, nor were there any notable neurological postoperative complications reported.

This file of records proves the fallacy of many commonly-accepted formulae for administering spinal anesthesia. Among these are:

Such and such a dosage in milligrams for such and such weight of the patient.

A definite dosage in milligrams for the various surgical procedures.

A certain dosage in milligrams is safe, and another dosage is unsafe.

A certain per cent solution is the optimum.

So many c.c. should be used for a certain height of anesthesia upon the body surface.

These misconceptions have been discussed in detail in a previous thesis.<sup>2</sup>

Thorough understanding of the principles involved, plus reasonable alertness in recognizing clinical phenomena, enables one to finesse each surgical problem as regards height, intensity, and duration of the resulting anesthesia.

2. Rombert, F. T.: *Spinal Anesthesia, Practical Facts and Common Fallacies. Anesth. & Analg.*, Sept.-Oct., 1943.

Write the author for a reprint of each article.

### GLOMUS TUMORS

(H. W. Meyerding & J. W. Varney, Rochester, in *Minn. Med.*, Feb.)

Glomus tumors may cause excruciating pain. Because of their rarity they may remain unrecognized for years. Recently we have operated on two patients who had glomus tumors of nine and 16 years' duration, respectively. In each case there was complete relief of symptoms. Early diagnosis and treatment are dependent on recognition by the general practitioner.

Glomus enlargements, or arteriovenous shunts, occur normally in skin and subcutaneous tissue, most frequently in the finger tips, where they regulate temperature when the hands are exposed to cold. With increased growth of these tumors, they become very painful. They are usually located under the nail in the visible part, or as far back as the root of the nail under the skin.

Mason and Weil found such tumors over the acromion, on the palmar surface of a finger, in the forearm, in the arm at the insertion of the deltoid, in the thigh, in the leg, in the knee joint, under the toenails and in the sole of the foot. The essential finding which should lead one to suspect a glomus tumor is any very painful, discrete region of trigger-like pain, where a small grayish blue or reddish purple nodule can be palpated or seen.

Occasionally the tumor may be so tiny as to be found with difficulty. The easy pin test consists of locating the tumor by means of a sharp pin; after it is found, the pin is left in place while nerve block is performed with procaine at the base of the finger. In this manner, the lesion can be completely removed, as its exact location is known.

THE FIRST MEDICAL DEGREE given in America was the honorary degree conferred on Daniel Turner by Yale College in 1723. He realized the risk of infection from scabies by wearing infected gloves or by sleeping in an infected bed.—*Liverpool (Eng.) Medico-Chirurgical Journal*.



# DERMATOLOGY

## COMMON DERMATOLOGIC DISEASES

A RECENT PAPER<sup>1</sup> on common skin disorders appeals as practical and authoritative. Some of the points made are recorded in brief.

Eczema as a term has a use and a place; it may be acute, subacute, or chronic inflammation; erythema alone, isolated or grouped papules, vesicles or pustules upon a reddened, infiltrated base. One can best think of eczema as an irritable skin without known cause.

In contact dermatitis the hands and face are most commonly involved; it may be acute, subacute, or chronic; usually the eruption is well localized to the site of exposure. Patch tests are helpful for diagnostic purposes; occasionally a positive reaction may be only incidental.

Multiple hypersensitivity is the rule in the atopic individual. Dust, wool, and danders are among the most frequent sensitizers. Scratch or intradermal tests are of little value. Negative reacting substances may cause exacerbations, while positive reactors may be innocuous on clinical exposure.

Treatment of any acute dermatitis is best by a dressing of gauze dipped in the solution—Darier's solution (copper sulfate in camphorated water) diluted 1 to 16 or 1 to 32; Burow's solution (aluminum subacetate) diluted 1 to 10 or 1 to 20 with water; or a 3% boric acid solution—and then well wrung out to avoid maceration—30 to 40 layers snugly applied, moistening every three hours.

In the event that burning results from any one, a change to another of the three is often effective.

Leiner's zinc lotion or calamine lotion is often adequate in a less extensive acute or subacute eruption. Either menthol or camphor,  $\frac{1}{4}$  to  $\frac{1}{2}\%$  plus phenol,  $\frac{1}{2}$  to 1%, is effective against itching when added to these lotions. Lassar's zinc paste or Rosen's ointment is effective where dryness develops. Soda, starch, or oatmeal baths are least irritating for removing the debris that accumulates on the skin.

Urticarial wheals vary from dead white to pale yellow, pink or red; and from size of a pinhead to a palm or larger. Itching is usually present in varying degree. When wheal-like lesions do not disappear after administration of adrenalin, think of some other condition, e.g., the lesions of erythema multiforme. Adrenalin dosage—2 or 3 minims. hypo., repeated q. 10 to 15 minutes up to a total of 1 c.c. Benadryl is of great help—50 mgms. three or four times a day.

Of great help, also, is 10 to 20 c.c. of blood, removed from and reinjected immediately deep into the buttock every other day for up to two weeks' time. The combined use of crude liver extract, up

to 5 c.c. intramuscularly every day or every other day, and dilute hydrochloric acid by mouth in 15 to 20 minim dosage before and in the middle of each meal is well worthy of trial in some cases. Purging here is a valuable adjunct, and elimination of suspected foods or drugs is indicated.

One should try to correlate the eruption with drug ingestion, the presence of infection, and with emotional disturbances. Nervous exhaustion precedes many cases of intractable urticaria. Much has been accomplished by manipulation of their situation at home or at work. Phenobarbital sedation for a few weeks often stops a vicious cycle. Adrenalin, Benadryl and auto-hemotherapy have a place in the treatment of chronic urticaria as well as the acute.

Calcium penicillin ointment, 5% sulfathiazole ointment, or a combination of penicillin and sulfathiazole in an ointment base, offers quick and effective therapy in the treatment of impetigo. The sulfathiazole offers a greater chance of a contact eruption through local sensitization.

Hospitalization is demanded in cases of furuncles and carbuncles if the danger areas of the face are involved. Effective in their treatment are superficial x-ray therapy, with the local infiltration of furuncle or carbuncle and surrounding area with penicillin solution. When furuncles or carbuncles continue to develop, desensitization with staphylococcus toxoid is usually effective.

For control of the heat and moisture in either a contact dermatitis, a dermatomycosis of the hands or feet, or infectious eczema or in intertrigo, penicillin ointment may effect rapid control.

Infectious eczematoid dermatitis is a weeping, spreading and crusted eruption, produced by staphylococci. The wet pack is the most effective topical therapy. Ultraviolet light and superficial x-ray are useful adjuncts in all types of secondary infected eczemas.

Dermatomycosis may vary from mild scaling on the interdigital areas of the feet to fissuring of these webs; often there is secondary bacterial infection. Ointments or powders with undecylenate-undecylenic acid, now available in the form of Desenex ointment and powder, is of proven value.

Severe cases of ringworm (animal) may present the appearance of a carbuncle. However, the infected tumor is not as acute and painful. Salicylic acid and sulfur alone or combined in ointment bases, in sufficient strength to be both keratolytic and irritant, are effective.

In ringworm (human) the eruption is highly contagious. Patches of lustreless hair at first, hairs loosen and fall—inflammation is mild, with or without scaling. Early detection on a large scale is possible by use of a Wood light, in which ultraviolet light is filtered by nickel oxide. It is a difficult therapeutic problem and often requires com-

1. M. G. Fredericks, Duluth, in *Jl. Lancet*, Mar.

plete epilation of the scalp with x-ray. Cultural studies distinguish the human from the animal type.

In the treatment of scabies, zylate is effective and much less offensive than sulphur. Success depends on application to all body surface except the head over a five- to seven-day period.

Seborrhea. Salicylic acid, resorcin, or euresol, and sulfur are the agents of choice in topical therapy. Oil vehicles are preferable in the dry type. Salicylic acid or resorcin in alcohol, in seborrhea of the oily type, are most acceptable to the patient. Control of abnormal gland activity may be promised, rather than cure.

Acne vulgaris is prone to spontaneous remission at the end of the pubertal years. Permanent scars may result. When acne develops for the first time in the early twenties it is more difficult of management. Resorcin and sulfur in lotions or paste are effective topical applications. Exposure to the sun or to ultraviolet light can be of great help. Superficial x-ray therapy, given in fractional dosages, is in most cases the most satisfactory and effective treatment. Cleanliness of the skin, with the use of any mild soap, is requisite.

The white scales of psoriasis are not greasy. The drug of choice is an ointment with ammoniated mercury 10 to 20% on the scalp, and 3 to 5% elsewhere. Paste with a 1 to 6% crude coal tar, especially when combined with either exposure to sunlight or an ultraviolet light, is also highly effective.

Pityriasis rosea is a self-limited eruption, asymmetrically distributed over the trunk and limbs. Seldom below the knees or elbows. The lesions are yellowish, pinkish, or reddish scaling macules of various sizes, usually oval, in which the long axis of the lesions parallels the lines of cleavage of the skin. An initial, large, single plaque precedes the general outbreak by one to two weeks and is often mistaken for ringworm. All lesions are covered with a thin, white, branny scale. The patches may enlarge and the central portion tend to clear, giving rise to slightly elevated reddish rings with fawn-colored centers. Spontaneous disappearance of the eruption will take place in from six weeks to several months. Mild exfoliative ointments, containing salicylic acid, and peeling doses of ultraviolet light can shorten greatly the length of the attack. Hot baths aggravate the eruption and result in itching. Always take tests for syphilis.

A recent discovery is that podophyllin, 25% in mineral oil or an ointment base, is specific for the acuminate common wart.

Pyogenic granulomas, which often appear to be the result of trauma and infection, may require biopsy and microscopic study of the stained tissue to differentiate from malignant tumors.

Common precancerous lesions worthy of note are the keratoses, either senile or seborrheic in type, and leukoplakia. Tests for syphilitic infection in all cases of leukoplakia. Immediate destruction by radiation or cautery of the senile keratosis and of leukoplakia is generally indicated. Seborrheic keratoses are usually deep brown and covered with a greasy scale. Local destruction with cautery is curative.

Carcinoma of the skin must be ruled out by microscopic examination of the tissue in every plaque, nodule or ulcer which does not heal in a reasonable time, especially in a patient of 40 years or more.

#### ACUTE HEPATITIS

(D. A. Gilmest, Des Moines, in *Jl. Iowa State Med. Soc.*, Mar.)

In hepatitis all known testable functions may be disturbed at one time or another. In mild cases tests of greatest value are white blood cell and differential counts, a test for concentration of bile pigments in the blood, and a cephalin-cholesterol flocculation test. In more severe cases, the most informative tests are total and fractional serum protein, blood sugar, blood nonprotein nitrogen, prothrombin time, blood phosphatase, red blood cell sedimentation rate, total and fractional blood cholesterol, and bromsulfalein excretion tests. About 95 per cent of patients recover without residuals. Of the remaining 5 per cent some die; some have recurrence of jaundice; and some have residual symptoms, the majority of which are psychogenic. Rest is the main principle in treatment. Heavy exertion should not be permitted until two to three weeks after complete clearing of jaundice. Diet should be high in protein (except in acute phase), high in carbohydrate, and low in fat. Vitamins should be given in two to three times normal daily requirement. Studies are in progress throughout the world which should further clarify this disease.

#### FILARIAL INFECTIONS

(Col. J. E. Ash, M.C., U.S.A., Washington, in *W. Va. Med. Jl.*, Mar.)

The Loa loa is long lived and travels about through the subcutaneous tissue not infrequently invading the conjunctiva, but it does little or no damage.

I would warn you that in spite of the fact that these worms, together with many of the other parasites which our troops acquired in their overseas campaigning, are chiefly of academic interest to the general practitioner in this country. It is necessary only that you be conscious of the possibility of the occasional case. Do not consider every case of inguinal lymphadenitis to be of venereal origin. It may be filariasis. Do not be alarmed if a patient comes to you complaining of itching, burning sensations in some part of his body that give him the impression of something crawling under the skin. It might be just that—Loa loa!

THE SULFONAMIDES are specific only in chancroidal infections. They are valuable in superficial pyogenic infections, such as impetigo, ecthyma and secondarily infected dermatoses. These conditions, however, are controlled by other drugs (ammoniated mercury, penicillin, tyrothricin, etc.) and one does not take the unnecessary risk of sensitizing the patient. In addition to the local and generalized dermatitis that may appear, delay in healings and troublesome sanguinous oozing may develop.

Reactions to sulfa drugs which are used locally are frequent and may be serious.

The use of sulfa drugs for local application should be discouraged.—Wm. L. Debes, in *Jl. Med. Assn. Ga.*, Feb.

## President's Page

COMING INTO THE PRESIDENCY of the Tri-State Medical Association is the realization of an early and earnest ambition. Soon after entering on the practice of medicine I was fortunate enough to become associated with Dr. A. J. Crowell. For the next dozen years I had dinner in the home of Dr. Crowell on at least half of the Sundays, and Dr. John Peter Munroe was nearly always my fellow guest.

Both of these distinguished medical gentlemen were enthusiastic Tri-State members. What more natural than that I should think of membership in this organization as an honor and a privilege? Or that I should entertain some hope of holding office in the Association?

After becoming a member I came in the meetings to know and appreciate Dr. Stuart McGuire, Dr. Robert Wilson, Dr. Cyrus Thompson, Dr. Joseph A. White, Dr. Dave Tayloe, Dr. Robert Bryan, Dr. Charles Stanley White, Dr. Charles R. Robins, Dr. Murat Willis, Dr. James K. Hall, Dr. C. C. Orr, Dr. Hubert Royster, and so many others of the leaders in medicine and surgery, only a few of whom now remain.

Both Dr. Crowell and Dr. Munroe became president of the Association. And now, by your favorable consideration, I have been voted into this office.

I am appreciative of the honor you do me and I pledge myself to be alert to promote the good of the Tri-State Medical Association in every way within my power, not only during my incumbency as president, but for all the after years. And I call upon every other member, especially every other officer, to bear the welfare of the Association in mind and to promote its interests not only at the time of the annual meetings, but during all the time between meetings.

RAYMOND THOMPSON

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As is true of most Medical Journals, all costs of cuts, must be borne by the author.

## PSYCHIATRIC SENSE AND NONSENSE

"IT IS NONSENSE to claim that present-day psychiatry contains the cure for all mental ills. It is nonsense to claim that if psychiatry only had a chance a vast majority of psychiatric breakdowns could be prevented. Largely through preventive medicine, the span of life in America has been lengthened 20 years within a single generation. What does psychiatry have to offer today that is at all comparable to that."

These are not statements of those who might be called detractors of psychiatry and psychiatrists. They are the statements of one of the most eminent among the psychiatrists themselves.<sup>1</sup>

And he goes on to say much of the same sort all well calculated to develop a better understanding between psychiatrists and other doctors of medicine, and to help us to better serve our patients, sick in their minds.

There is nothing vague or hazy in the expressions which follow, if not in his exact words, in words conveying the same plain meaning.

With few exceptions, the psychiatrist does not know the cause of so-called mental diseases. Most diagnostic terms do not represent disease entities. The establishment of disease entities must antedate any scientific exploration into the causes and prevention of mental diseases.

Other therapies are important adjuncts, but psychotherapy, in the form of personal tutoring, and sound physical medicine are a reliable basis for all present-day psychiatric treatment aimed at restoring patients to society. Unless that patient is better equipped, when he leaves the institution, to cope with his problems outside the institution, treatment has been a failure. He must be trained to develop and to use his mental and physical resources in the world as it exists outside the mental hospital: must be reeducated for living.

How many patients will make baskets, weave rugs or polish floors in their communities if the psychiatrist succeeds in sending them home?

To the extent that patients are exposed to any procedures foreign to their lives outside of the hospital, one may be guilty of practice of very questionable value.

Man's first need is to be of some use to others in a way to provide a livelihood for himself and his dependants.

Most persons have avocations or hobbies to satisfy their urge to be usefully interested in life.

One needs to do things with other people, needs their company and needs to know how to get along with them.

A human being sits psychologically on a four-legged chair. One leg of that chair is his vocation:

1. C. C. Burlingame, Hartford, in *N. A. M. J.*, April 5th.

another leg is his avocation; the third leg of that chair is the social and recreational leg, and the fourth is his physical self. If his chair has four solid legs, he is destined to sit comfortably and securely throughout life.

Most important of all, the psychiatrist must express himself in terms which can be understood by every medical practitioner, and psychiatry must be made an integral part of medicine. It does not take a great mind to make simple things complicated, but it takes a very great mind to make complicated things simple. Let psychiatrists, then, distinguish between psychiatric sense and psychiatric nonsense and bring simple, hard-headed sense into this field.

Now, isn't that fine? There is so much of sense, so much of modesty, so much of helpfulness in it, that I will only mildly rebuke Dr. Burlingame for intimating that the general practitioner's understanding is less acute than that of any specialist, even that of the psychiatrist.

A good many years ago I knew a man who followed many of his statements with, "You know what I mean." On one occasion a blunt individual retorted, "No, I do not, and neither do you; if you did, you would have no trouble in putting your meaning into words which will convey your meaning."

If psychiatrists will confine themselves to words which have meanings, according to good lexicographers, G. P.s will get the meaning, whether the words be of one or a dozen syllables.

#### WE ACKNOWLEDGE A DEBT

(Reprinted from *New York State Journal of Medicine*, March 15th)

DR. LEE DEFORST, now 73 years old, was one of the men who fathered modern radio. This is not to minimize the pioneer work of Signor Marconi, or Dr. Fleming, whose valve Dr. deForest improved by the addition of a third element. Dr. deForest's contribution of forty years ago to the science of communications, which made possible the later art of radio broadcasting and sound motion pictures, entitled him beyond question to make outcry with a father's understandable solicitude.<sup>1</sup>

What have you gentlemen done with my child? He was conceived as a potent instrumentality for culture, fine music, the uplifting of America's mass intelligence. You have debased this child, you have sent him out on the streets in rags of ragtime, tatters of jive and boogie wogie, to collect money from all and sundry for hubba and hubba and audio jitterbug.

You have made him a laughing stock of intelligence, surely a stench in the nostrils of the gods of the josphere; you have cut time into tiny cubelets, called shorts (more rightly stains), wherewith the occasional fine program is periodically smeared with impudent insistence to buy or try.

The nation has no soap, but soap opera without end or sense floods each household daily.

Murder mysteries rule the waves by night and children are rendered psychopathic by your bedtime stories.

This child of mine has been resolutely kept to the average intelligence of thirteen years. Its national intelligence is maintained moronic, as though you and your sponsors believe the majority of listeners have only moron minds. N y, the curse of his commercials has grown consistently more cursed, year by year.

1 N. Y. Times, Jan. 21, 1947.

We are entirely sympathetic to Dr. deForest's inquiry and mild, courteously restrained comments addressed to the National Association of Broadcasters. Modern, scientific socially conscious American medicine now has many technics, research facilities, and communications facilities for which doctors and their patients should be profoundly grateful to Dr. deForest and his coworkers. We acknowledge the debt, unfortunately accepted too much as a matter of course and with heretofore faint expression of gratitude.

For his query to the National Association of Broadcasters we are now still further in his debt. He did not specifically include, as he might have, the nauseating "jabber-wacky" of commercial invitations to self-medication, the endless piddle-paddle of the proprietary pluggers, the husky honking of the hormone and vitamin hucksters; the pain killers, the headache hushers; the short courses in pseudoscience, intestinal pathology, gastric malfunction; the biochemistry of the belch, the lush lowdown on the liver, the crafty stalk by a vibrant voice (with or without gun and camera) into the lands of the "hairyanus," for example, in pursuit of the humble hemorrhoid, or how to agitate a limp or lissom libido.

We must, we suppose, take the good with the not-so-good on the ground that there may be a fly in any ointment, but at least the fly doesn't buzz, sing jingles, or audibly irritate the customers, however much its presence there at all reflects, shall we say, carelessness in final inspection? This is no fault of Dr. deForest's, but evidence of juvenile delinquency in his offspring.

The editor of *Southern Medicine & Surgery* has not been able to learn the identity of Dr. deForest. He hopes Dr. deForest is a doctor of medicine. He thinks and writes like a doctor of medicine whose teachers put the training of the mind ahead of the training of the back, legs and arms; who emphasize, as did Osler, that a doctor of medicine (and all other college men) should have the education, if not that of a scholar, at least that of a gentleman.

"O Liberty, the crimes that are committed in thy name."

Fortunately for her own happiness Madame Roland was dead long ere the deification of the great god, Progress.

## BRAXTON BYNUM LLOYD

1886-1947

THE COMMUNITIES of Carrboro, Chapel Hill and the surrounding country areas have experienced a silent order of sadness, an inward feeling of loss and natural grief in the death of Dr. Lloyd. This is as it should be.

Dr. Lloyd was the son of William P. and Mary Sparrow Lloyd, sturdy, dependable names in this section. He was born on Christmas Day 1886 and died near the home of his birth in Carrboro in the early morning of Thursday, March 20th.

Dr. Lloyd's education was obtained in the Chapel Hill Schools, the University of North Carolina, and at the then complete, diploma-granting Medical School of the University. In this school he was a student for two years at Chapel Hill and two years at the extension of the school in Raleigh. He graduated in medicine in May, 1909. Following his graduation he became House Surgeon at the Newark Eye and Ear Hospital, which position he held for three years. At the end of this service he returned to Carrboro to spend the rest of his life as village and country doctor. During Dr. Lloyd's residency at the Newark hospital he came to know and later to marry Miss Emma Hanse, who survives him. His wife in her devotion lived his life in caring for the sick, in receiving calls and locating the good doctor that he might aid those in distress.

There is no way to appraise Dr. Lloyd's services as physician which he gave to this community over a period of thirty-five years. His successes which were abundant were in the silences of sickness and distress, in village and country homes where he, the patient and the patient's family worked to save a life or to readjust one to a workable way of living. These accomplishments were not heralded in medical journals. His percentage of cures were not computed and tabulated. The lives he saved, the individuals he readjusted serve as his living, tangible record. Seeing several cases of pneumonia, a variety of other illnesses, setting a broken bone and attending two to four deliveries during a twenty-four-hour period left little time for sleep and no time for registering his thoughts in the written form. He was on call all day and all night and when the call came, he went regardless of who made it or where the call came from. A ten-mile journey was undertaken with the same interest and determination as was a visit across the street in Carrboro. The call of distress had been received and acknowledged. He went and he came back only after he had done his best. He did not ask if remuneration was a certainty, he did not debase himself and his profession by first thinking of gain. He lived to give and as is ever the case, the giving was abundantly returned. With these

and other characteristics he was the Doctor of the Old School, that type of physician Robert Louis Stevenson considered the finest product of our race. A visit by him was not a hurried call, perhaps a hypodermic injection, and away for leisure. His calls were time-consuming. He remained with the sick, in the distressed household until he felt he knew something of the nature of the patient's ailment and in turn had commenced an appropriate order of treatment. It was his objective to heal the sick. Dr. Lloyd in his ministrations was friend, counselor and guide. Those things which came to his knowledge from the sick and sore distressed, from the family, he considered sacred and kept them secure in such a confidence. Thus he eased the mind as well as the body. He gave strength to the weak, and comfort, that priceless remedy for the spirit which cannot be measured, when he could not effect a cure. To those distressed by lack of means he gave freely and gladly of his services as physician and more often than we know about, he furnished drugs for their relief and food and clothing. Such was the life of Doctor Lloyd by day and by night. He lived on a twenty-four-hour shift for service. He had no thought whatever of his own physical welfare. Such thoughts were lost in his patients. His life is a bright and lasting lesson to the noblest men in medicine of today, the general practitioners of medicine, the family order of physicians.

Three days ago while on a fifteen-mile trip he had his first heart attack. Early Thursday morning, March 20th, he suffered a second attack. He at first refused to have another good doctor called, with the statement he was likely tired and should rest and sleep. In death his thought was for the welfare of someone other than himself.

The communities of Carrboro, Chapel Hill and the surrounding country districts have lost an order, a type of physician who will come no more. The memory of this man will linger in these communities as a tradition, as a fine example of what a physician should be. This may mock those of us who cannot travel the pathways of helpfulness in healing the sick which he made to a large extent throughout Orange County and to a less extent in other surrounding counties.

"A man was going down from Jerusalem to Jericho, and he fell among robbers, who stripped him and beat him and departed, leaving him half dead. Now by chance a priest was going down that road; and when he saw him he passed by on the other side. So likewise a Levite, when he came to the place and saw him, passed by on the other side. But a Samaritan, as he journeyed, came to where he was; and when he saw him he had compassion and went to him and bound up his wounds, pouring on oil and wine; then

he set him on his own beast and brought him to an inn, and took care of him. And the next day he took out two denarii and gave them to the inn-keeper, saying, 'Take care of him; and whatever more you spend, I will repay you when I come back.' Which of these three, do you think proved neighbor to the man who fell among robbers? He said, 'The one who showed mercy on him.' And Jesus said to him, Go thou and do likewise."

"Brack" Lloyd went.

—WM. deB. MacNIDER.

March 20th, 1947.

#### THE EFFECT OF WARTIME ON DIABETES MELLITUS

...(*An. Medicinæ Internæ Fenniae*, Vol. 35, Fasc. 3, 1946)

The author has observed the effect of wartime as reflected in diabetes patients by comparing the data for the last six months of 1938 and 1944 collected from the clinics of the two medical hospitals in Helsinki.

The following were the principal observations made:

No definite decrease in the incidence of diabetes could be established.

The number of diabetics using insulin increased somewhat during the war.

The average insulin consumption and blood sugar value distinctly decreased in the case of diabetics over 50, whereas no significant changes were found in these respects among younger patients. The reason assigned is, in addition to a reduction in the weight of the patients, the compulsory transition, due to wartime, to a high carbohydrate diet, which appears to be beneficial in the treatment of diabetic patients of advanced age in particular.

#### CHRONIC ULCERATION ON THE HEEL IN CONNECTION WITH DIABETES, TREATED LOCALLY WITH NITROGLYCERIN

...(*An. Medicinæ Internæ Fenniae*, Vol. 35, Fasc. 3, 1946)

Lund has begun using nitroglycerin percutaneously, in order to obtain in this way the protracted action of nitroglycerin. At the beginning he used this method for the treatment of hypertonia and angina pectoris. The worst drawback of this method is the frequent occurrence of headache.

Later Lund proceeded the use of nitroglycerin salve, 0.5 to 4.0 per cent, against peripheric disorders of the circulation, such as senile gangrene, bed-sores, arteriosclerotic lesions of the legs, dysbasia intermittens and Raynaud's disease. In several cases he saw a much swifter healing of the wounds than usual, and also the symptoms of a disordered circulation were weakened or disappeared completely in the course of this treatment.

During the whole period of treatment by nitroglycerin the patient had not complained of headache.

Hirooner reports a case of a woman of 64 suffering from diabetes, who had a tissue necrosis of the size of 1.5 x 2.5 cm. on her heel, due to the influence of chill and chafing. This necrosis did not yield to insulin treatment with simultaneous baths and sterilized fomentations, but a healing was accomplished by means of applying nitroglycerin ointment of 2 per cent.

Two Spanish physicians joined Columbus's forces in 1492, and on that historic passage to the New World sailed the Jew, Maestre Bernal, as ship's physician and the Jew, Marco, as ship's surgeon—*Hadassah News Letter*.

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Dr. W. H. Hollinshead—Professor of Anatomy

Dr. D. S. Martin—Professor of Public Health and Associate in Medicine

Dr. Hans Neurath—Professor of Biophysical Chemistry

Dr. J. W. Everett—Associate Professor of Anatomy

Dr. Hans Löwenbach—Associate Professor of Neuro-psychiatry and Associate Professor of Physiology

Dr. W. M. Nicholson—Associate Professor of Medicine

Dr. E. L. Persens—Director of Student Health, Assistant Professor of Medicine, and Associate Professor of Public Health and Preventive Medicine

Dr. Ralph Arnold—Assistant Professor of Otolaryngology and Ophthalmology

Dr. Otto Billig—Assistant Professor of Neuropsychiatry

Dr. K. L. Duke—Assistant Professor of Anatomy

Dr. Grant Taylor—Assistant Professor of Bacteriology, Assistant Professor of Pediatrics, and Assistant Dean

Dr. James G. Whildin—Assistant Professor of Radiology

##### New Appointments

Dr. George F. Sutherland—Visiting Assistant Professor of Neuropsychiatry

Dr. F. L. Engel—Associate in Medicine

Dr. M. Bolus—Instructor in Dermatology and Syphilology

Dr. E. I. Bugg—Instructor in Orthopaedics

Dr. J. B. Hickam—Instructor in Medicine

Dr. J. Hitch—Instructor in Dermatology and Syphilology

Dr. J. D. Myers—Instructor in Medicine

Dr. Benjamin Skinner—Instructor in Pediatrics

Dr. Charles Styrén—Instructor in Medicine

Dr. K. D. Weeks—Instructor in Medicine

Dr. K. D. Weeks—Instructor in Medicine

Dr. Walter Cargill—Fellow in Medicine

Dr. J. E. Jacobs—Lecturer in Orthopaedics

#### TAKING PART IN PROGRAM SOUTHEASTERN SURGICAL CONGRESS

Louisville, March 10th-12th.

Dr. W. G. Crutchfield, University of Virginia—Surgical Treatment of Hypertension.

Dr. K. M. Brinkhous, University of North Carolina—Thrombin and its Clinical Applications.

Dr. J. R. Young, Anderson, S. C.—An Institutional Study of Acute Appendicitis over a 23-year period.

Dr. R. B. McKnight, Charlotte, N. C.—An Analysis of 1,100 Consecutive Thyroidectomies.

Dr. Everett I. Evans, Medical College Hospital, Richmond, Va.—Title to be announced.

For Information, write to DR. B. T. BEASLEY, 701 Eurt Bldg., Atlanta, Ga.

#### WILLIS SUCCEEDS MCCAIN

The Board of Directors of the North Carolina Tuberculosis Sanatoriums has selected Dr. Henry S. K. Willis, superintendent at the William S. Maybury Sanatorium, Northville, Michigan, as superintendent of the three State institutions, succeeding the late Dr. Paul P. McCain. Dr.

Willis is a graduate of the University of North Carolina and of Johns Hopkins University School of Medicine, Baltimore.

MECKLENBURG COUNTY MEDICAL SOCIETY, Tuesday, April 1st, 8 p. m., Mint Museum.

*Medical Aspects of Atomic Warfare*—Capt. R. P. Parsons, M.C., U.S.N., U. S. Naval Medical School and National Naval Medical Center, Bethesda, Maryland.

DR. CHARLES B. NORRIS announces the opening of offices for the practice of Internal Medicine, in association with DR. WILLIAM C. MATTHEWS.

DR. J. D. GILLAND, for a number of years a surgeon of Charlotte, has been appointed surgeon in chief to the Kelley Memorial Hospital at Kingstree, S. C. Dr. Gilland is a native of Florence, S. C., and a nephew of Dr. Frank H. McLeod, of Florence.

#### DIED

Dr. Max Schoenbaum, 64, died March 28th at a Richmond hospital. He was a native of Germany, came to this country early in life and received his M.D. degree in the class of 1905 at the Medical College of Virginia.

After his graduation, Dr. Schoenbaum entered practice at Highland Springs but moved to Richmond 20 years ago and had enjoyed a large practice till a few weeks ago.

He was a member of the Richmond Academy of Medicine; the Medical Society of Virginia, and the American Medical Association.

Dr. William Clyde West, former City Health Officer of Alexandria, Virginia, died at his home in Fairfax County on April 1st, at the age of 54 years. Dr. West was a graduate of the Medical College of Virginia in the class of 1920.

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—W. A. Thomas and S. Butler, Chicago, in *Bul. N. Y. Acad. Med., Mar.*

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## BOOKS

PRINCIPLES AND PRACTICE OF OBSTETRICS, by JOSEPH B. DELEE, M.D., Late Professor of Obstetrics and Gynecology, the University of Chicago; and J. P. GREENHILL, M.D., Attending Obstetrician and Gynecologist, the Michael Reese Hospital; Professor of Gynecology, Cook County Graduate School of Medicine. 9th Edition. 1011 pages; 1108 illustrations on 860 figures, 211 in color. W. B. Saunders Company, Philadelphia and London. 1947. \$10.

This textbook which has been the choice of an ever-increasing number of teachers of obstetrics, obstetricians, general practitioners and medical students for so many years has now come to its ninth edition. There are new chapters on minor disturbances of pregnancy; premature labor, prolonged pregnancy or postmaturity and missed labor; fetal erythroblastosis, care of premature babies and circumcision. There are entirely rewritten chapters on physiology of the fetus, antepartum care, and postpartum care. Major changes and inclusions are made in the chapter on analgesia and anesthesia especially.

This edition is quite worthy of its predecessors, and there could be no higher praise.

PRACTICAL PHYSIOLOGICAL CHEMISTRY, by PHILIP B. HAWK, Ph.D., President, Food Research Laboratories, Inc., Long Island City; BERNARD L. OSER, Ph.D., Director, Food Research Labs.; and WILLIAM H. SUMMERSON, Ph.D., Associate Professor of Biochemistry, Cornell University Medical College, New York City. 12th edition. The Blakiston Company, 1012 Walnut St., Philadelphia 5. 1947. \$10.

Forty years ago Hawk's Physiological Chemistry made its first appearance. The marvelous advances in knowledge of this subject and of the practical application of this knowledge to the promotion of human health was barely glimpsed at that time. All the way from the 1907 first edition to the 1947 12th edition this book has been in the van of books of instruction in this field.

Especial attention is called to the new chapters on colorimetric analysis, and to important changes in the parts treating of protein chemistry.

FUNDAMENTALS OF CLINICAL NEUROLOGY, by H. HOUSTON MERRITT, M.D., Professor of Clinical Neurology, College of Physicians and Surgeons, Columbia University; FRED A. METTLER, M.D., Ph.D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University; and TRACY JACKSON PUTNAM, M.D., Professor of Neurology and Neurological Surgery, College of Physicians and Surgeons, Columbia University. The Blakiston Company, 1012 Walnut St., Philadelphia 5. 1947. \$6.

First we have an introduction, then a chapter on the history and the general examination, then an admirable dealing with the neurological examination which includes a list of the instruments used, examination of the cranial nerves, of the motor



system, of the sensory system, of speech and other higher cerebral functions. Especially impressive is the chapter on the comatose patient.

Part II is devoted to the anatomic diagnosis of disease affecting the nervous system in its various parts.

This book sets forth the fundamentals of clinical neurology in an attractive, easily assimilable manner, and with no wastage of words. No doctor could spend \$6 more profitably than in making this investment.

**BANTING'S MIRACLE:** The Story of the Discoverer of Insulin, by SEALE HARRIS, M.D., with a foreword by ELLIOTT P. JOSLIN, M. D. 33 illustrations. *J. B. Lippincott Company*, East Washington Square, Philadelphia 5. 1946. \$3.50.

The greatness of Frederick G. Banting and the wonderful life-saving value of his work demanded a biography. Banting is fortunate in his biographer. Dr. Seale Harris was one of the first to recognize and put into use in a large way the discoveries of Banting. He has spent much time among the associates of Banting from his childhood to the end of his life, and he has made a fascinating story of this life which will delight the scientist, the historian, and the general reader—all who love good writing about the great.

**THE 1946 YEAR BOOK OF PEDIATRICS**, edited by ISAAC A. ABT, D.Sc., M.D., Emeritus Professor of Pediatrics, Northwestern University Medical School; with the collaboration of ARTHUR F. ABT, M.D., Associate Professor of Pediatrics, Northwestern University Medical School. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago. \$3.75.

The advancements made in this field in the past year are faithfully recorded and accounts are given of investigative work which holds out promise of constituting advance.

**PHYSICAL MEDICINE IN GENERAL PRACTICE**, edited by ARTHUR L. WATKINS, M. D. *J. B. Lippincott Company*, East Washington Square, Philadelphia 5. 1946. \$5.00.

Physical Medicine's value in general medicine, and in general surgery and in all the specialties, diagnostically and therapeutically, is presented in a practical way. The series of essays by the dozen or more authorities are all synopses of what might have been said by doctors each magnifying the importance of his own field.

It is a well balanced presentation of information of great usefulness to doctors who take care of their patients' ailments from top to toe.

**POEMS**, by JOHN S. YOUNG, M.D. *Bruce Humphries, Inc.*, 30 Winchester Street, Boston. 1946. \$3.

I have read these poems carefully and feel greatly indebted to the editor who so kindly sent me a copy for my own library.

Every one of these poems evinces concentrated thought and hard work and is a work of merit. The author is to be congratulated on the product of his mind and heart. It is a book for one and all who love poetry. Only a man who has lived a long time and thought much on man's origin and destiny could get together so much of wisdom in a volume of this kind and size.

The thread of philosophy that runs through the entire work is fascinating and appealing. Just about the entire gamut of human experience from the cradle to the grave is traversed in this book of poems. The things that touch the heart of the humblest man or woman are here as well as the things that touch those in the high places of life. This true poet expressed the fondest desires of the human heart as well as the evil things that it may fall heir to. It seems almost that he must have lived for centuries, to be able to express so well man's hopes, successes, frustrations and failures. His lessons may be taken to heart by young and old, good and bad, of all stations in life; and all may be benefited by the things taught and the advice given.

Many of the verses are of transcending beauty and expressiveness. Some would easily lend themselves to a consolidation that would increase their beauty and forcefulness.

What some of the poems lack in meter they make up in portrayal of truth and the things that man of this age, or any age for that matter, should take to his heart and nourish, both for his own good, and the everlasting good of mankind in general.

—W. W. CRAIGEN, M.D.

*Mistaken Surgical Diagnoses in Hookworm Disease* was the subject of the presentation by Dr. Dunan McEwan, Orlando, Fla., before the Southeastern Surgical Congress, at Louisville in this month.

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(J. L. Switzer, Chicago, in *Med. Times*, Jan.)

A girl, 14 years old, presented herself with severe, weeping and scaly eczema of the face, anterior surface of the neck, cubital fossae, popliteal fossae, and volar surface of both wrists. She had been an allergic child, with infantile eczema, and at present has some seasonal rhinorrhea. The patient had been skin tested frequently, and was found to be allergic to all the substances in several physicians' skin testing kits. Discouraged, she had seen several dermatologists who were unable to aid her during 1944-45.

Due to the severity of the skin lesions and the intractable pruritus the patient had been unable to leave her home and had not engaged in any social activities.

Examination was negative except for the excoriated eczematous lesions. A diagnosis of atopic eczema was made and the patient was started on elixir of benadryl, one teaspoonful every four hours. The following day the areas were dry, and there was no itching. The third day no scaly areas remained, and the only evidence of previous lesions was some pink pigmentation of the areas.

The fourth day the mother reported a slight recurrence of the lesions. The benadryl was increased to 50 mg. 4 i. d. Since then the eczema has been adequately controlled, without side-effects attributable to the benadryl. Laboratory tests were all within physiological limits, except for the hemogram which showed 5% eosinophilia.

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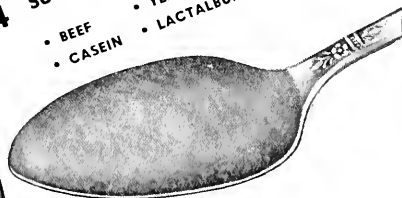
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JAMES M. NORTHINGTON, M.D., Editor

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## Cancers of the Uterus\*

W. LOWNDES PEPLE, M.D., Richmond, Virginia

I SAY cancers of the uterus because the individual cases behave so differently. There is no well defined pattern of behavior. We do not know what cancer is or what causes it. We do not know how to interpret the differences in behavior of cancers. Is it the kind of cancer that a patient has, that makes it mild or amenable to treatment, or, virulent, growing rapidly and killing the patient quickly? Or, are these variations due to the individual resistance, or lack of it, in the host?

In the four accepted grades microscopically worked out by Broders, one might ask the same question. Are these separate entities, four kinds of cancer; or are they four measures of resistance inherent in the patient's makeup? Thousands of ably trained workers are delving in laboratories and workshops and operating rooms trying to wrest this secret from a reluctant Mother Nature. Until this has been accomplished, we will just blunder along as we have done since the beginning of recorded medical history. Empiricism we call it. That is a good word for our morale. It helps us.

I shall discuss this subject purely from the practical standpoint of the clinician. Let us first take cancers of the body of the uterus.

The history given in a great majority of the cases will have the same revealing symptom—postmenopausal bleeding. A diagnostic curettage shows tissue that looks and bleeds like cancer, and

microscopically it is diagnosed as adenocarcinoma. Every once in a large number of cases we pick up a squamous-cell cancer, but very rarely.

Now, what are we going to do about it? This location of cancer makes it the most amenable to treatment. But unfortunately many of the patients who have this kind of cancer are only amenable to the mildest methods of treatment that offer a chance of relief. The textbooks and journals report about 65 per cent of all cancers of the body of the uterus as cured or arrested for five years or more. There are three methods of treatment.

1. Complete hysterectomy. This gives excellent results, probably 65 per cent of five-year arrests, but it carries with it a definite operative mortality.

2. Radium alone, we reserve for feeble old ladies, or those with complications such as hemiplegia, very high blood pressure, cardiac disease or diabetes. I cannot give a percentage recovery in these women, but I feel sure that more of them live longer, more comfortably, than would be the case following hysterectomy or any other treatment.

3. Now for those young enough and strong enough for the ideal treatment. What do we do for them? In clinics reporting large numbers of cases this group gives the highest percentage of five-year arrests. We give a preliminary dose of radium, 2400 to 3000 mg.-hrs., wait three to four weeks and do a complete hysterectomy. It is interesting to note from many sources that the uterus, when removed, at times shows no evidence of the cancer.

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It has disappeared completely. This latter group which we might call a selected group, gives a higher rate of five-year arrests than that in which we use surgery alone or radium alone. It runs possibly as high as 70 to 75 per cent.

#### CANCERS OF THE CERVIX

The primary symptom here is almost always abnormal bleeding—bleeding too much, bleeding between periods, or bleeding after the menopause. The provoking cause is said to be irritation, but it must be an irritation of a certain kind. It is said to be one of the penalties of motherhood for 85 per cent occur in women who have borne children, leaving 15 per cent for old maids and childless married women. I say it must be due to a certain kind of irritation, for I do not believe I have ever seen cancer in a completely prolapsed uterus, although many show a denuded bleeding surface from contact with the harsh clothing. I do not recall one that was associated with the use of pessary, although in most cases the use of pessaries causes some evident irritation of the cervix or vagina or both. I have had to remove pessaries with a saw because they had been embedded in the vagina back of the cervix until they had grown in, like a ring or horseshoe that has become buried in a tree. Yet I have not seen a cancer develop from such irritation.

One soon learns to diagnose cancer of the cervix from its feel and appearance. The biopsy report seldom takes us by surprise. It is startling to see what a hold the disease may have taken on the patient before she has any warning that anything at all is amiss. We have had several cases in which an overwhelming, devastating hemorrhage has been the first symptom experienced. Many patients have bled irregularly for months before consulting a doctor, and are astonished to know they have anything except the change of life to which all women are subject.

Change of life is a term that will explain anything out of the ordinary that may happen to a middle-aged woman. An issue of blood it was called in Bible times. In nineteen hundred years of intensive study and application we have learned to call it the climacteric, the change of life, the menopause; and still be it said to our shame, there are some among us who give shots for it and never make an examination to see if we can find a cause for it. How can we ever forget the blistering indictment Saint Luke, "the beloved physician," made of our profession for just such doings. "And there came a woman who had for a long time suffered an issue of blood, and she had suffered many things at the hands of many physicians, had spent all of her money, and was no better but worse." It took a miracle of Christ himself to make her whole again. And in nineteen centuries, when there

are no miracles to fall back upon, some of us have not learned to look, to see, and to feel, before we give shots.

To be methodical we record, group and classify our cases. We group them in Class A, B, C and D, according to the extent to which the cancer has seized hold upon the patient, and the pathologist grades them into Grades I, II, III and IV, according to their structure as noted under the microscope, Grade I being the least, and Grade IV being the most malignant.

It was thought by grouping and grading we could readily predict what the outcome of a case would be. But such is not the case. Nearly all clinicians are agreed that this cannot be done. While it is safe to say that the earlier we see a case the more we can expect in the way of a cure, we frequently get the most bizarre results from treatment, failing utterly in cases that seemed highly favorable and accomplishing a near miracle in a case that seemed hopeless. Some old-timer once said that a cancer that reached out to shake hands with you was more amenable to treatment than one that pulled back from you. The exuberant cauliflower type is infinitely more amenable to treatment than the funnel or crater type.

#### TREATMENT

Now for treatment. We first employed surgery, doing a complete hysterectomy. It was *possible* in only a very few cases, *applicable* in still fewer. I am aware of many glittering reports of percentages of successful surgical treatment. Mine all died, if not sooner then later. Those which I observed in other contemporary hands did the same thing. I think different people called different things cancer. At any rate they did what I and other contemporaries couldn't do.

Next came heat, cauterization. This was put upon a business-like basis by Percy with his specially devised cautery. There was a small group of five-year arrests from this treatment. What did it do? It killed the component cells of the cancer and got rid of the horrid sloughing growth and stopped the bleeding, but it probably did something more. It certainly kicked up a prodigious leucocytosis in the surrounding tissues which might have had a repelling influence on that unknown equation which we call cancer.

Before radium came into use heat was probably the most acceptable single method of treatment. It kept more people alive longer and more comfortably than any other method.

With the advent of radium came the best empirical treatment yet devised. I say radium instead of irradiation because radium is especially adapted to the treatment of the uterus. The agent being placed inside the organ acts directly upon the disease and exerts only its attenuated influence on the

surrounding vital organs; while the x-rays must be plunged through these delicate structures and through the womb itself before they strike the diseased tissue.

Our plan which we have been using for twenty-five years is about as follows. If there is a massive or cauliflower growth on the cervix we remove as much as possible with the cautery, then immediately apply the radium. Our aim is to give from 5 to 6 thousand mg.-hrs. We divide it into three doses, allowing a month between applications. This gives the edema time to subside and we believe we get fewer complications than if the full dose were given at one sitting. There are fewer fistulas of the rectum and bladder, and fewer strictures of the rectum.

We use the radium in the little rubbers made for fountain pens. The brass and platinum containers readily slip into these and by wrapping them with thread one makes a screw of each piece that will not slip out. We use needles plunged into the diseased cervix. We use 25 mg. in the fundus, 50 mg. in the body, and 5 needles of 5 mg. each plunged into the cervix. Thus we use 100 mg. for twenty-four to thirty-six hours giving from 2400 to 3600 mg.-hrs. We balloon out the vagina with all the gauze packing it will hold, thus pushing the bladder and rectum out of the backfire of the radium.

After the third dose we like to see the patient once in six months, then once a year for as long as we can.

What good thing do we look to see after treatment? Retraction and regression, a shrinkage of the cervix, a return to its natural contour. What do we dread to see? Extensive sloughing and consequent crater formation. The walls of the funnel slough and granulate and it looks like a diphtheritic membrane covered it. Sloughing, disintegration, and hemorrhage often supervene, until the walls are thin and one dreads perforation with fistula into the bladder or rectum or both.

The deaths occur in the first, second or third years. If they pass the third year we begin to be hopeful of them. I had one go bad in the seventh year and die. Can you do anything if they go bad after full primary treatments? Yes. A few backsliders have been saved by prompt application of more radium. We give x-rays when we think the tissues in the broad ligament are involved, or when we are afraid more radium might cause a fistula.

In over two hundred cases, taking them as they come and rejecting none, we have about 35 per cent of five-year arrests. Some have appeared well as many as twenty-three years. We love to look at these people when they come on their annual pilgrimage to report. Thirty-five out of a hundred seem mighty few but it's lots better than the 100 per cent mortality with which we began.

#### Discussion

DR. WM. DEB. MACNIDER, Chapel Hill, N. C.: Mr. President and Members of the Tri-State Association: I haven't attended a meeting in a good while and it is a joy to be back with this group of individuals. I feel that you get much more of medicine from a group of this size than you do from larger groups meeting in sections. The larger the society, the more mechanical it becomes and the more mechanics you introduce into life, the less thought you get from it, so that small societies, I think, have a very great function, and it is good to be here.

I want to say something about Dr. Peple's contribution. Whenever this thoughtful and learned gentleman says, it goes in pretty deeply with me. His zeal, yet his conservatism and self-abnegation are things which endear him to us all, and his results in treatment of uterine cancer, as he put these results without any element of bragging in them, were truly remarkable.

To a certain extent, for a good many years, I have been interested in trying to find out what age is; not what senility is, or what death is through senility, but what age is because it furnishes the background for so many things. Certainly the age factor is a dominating one in development of cancer. Follow your vascular disease. There is an age factor. Why is it that in the middle-age period we are so susceptible to blood-vessel disease and especially coronary disease? What happens to those tissues as they are ageing that makes them break down? It is a tremendously important thing. The same with a good many other conditions. Why do we speak of infantile paralysis? I suppose anyone can have poliomyelitis, but what is it that happens in a child that makes the anterior horn cells of the spinal cord of such chemical constitution that those cells furnish a fine culture medium for the virus of poliomyelitis? So, I had these thoughts when I was listening to Dr. Peple's paper, that with cancer we must try to find out something about the difference in the chemistry of cells of different ages before we can go very far with it.

I think before the Congress now there is a bill calling for a billion dollars, isn't it?—we rarely speak of any figure less than a billion dollars unless it happens to be in connection with a University professor—to study cancer. I hope it will be passed. We might as well spend some of the money that way as to throw it away otherwise. Medically we have gone to the place now where we have to think of intracellular chemistry and the pathologists are of very little help to us. The pathologists are interested in death. The time has come when we must be interested in the chemistry of life. Most any fool can recognize death. The pathologist seems satisfied with it. We know next to nothing about the chemistry of life and life at different age levels.

Well, I have had a nice time making that little statement.

#### REMARKABLE CASE REPORT OF HALF-CENTURY AGO (John Wesley Long, in *Trans. Sou. Surg. & Gynec. Assn.*, 1895)

I assisted my colleague, Dr. Geo. Ben Johnston, to do a secondary abdominal section on a young lady, whose tubes and ovaries had been removed by another surgeon, because of epilepsy occurring at the time of her periods; her periods and the epileptic seizures continued, and the woman's mind was rapidly becoming a blank. Dr. Johnston found the only pathological lesion to be adhesion of two coils of intestines to the stump of the right tube. These he carefully freed, covered the abraded surfaces of the intestine, touched the stump of the tube with the Paquelin cautery, and closed the abdomen without drainage. This case made a rapid and perfect recovery; the periods ceasing, the seizures not returning, and her mind rapidly regaining equilibrium.

## The Importance of Early Diagnosis and Treatment of Acute Peptic Ulcer\*

T. NEILL BARNETT, M.D., Richmond, Virginia

**M**EDICAL LITERATURE contains comparatively little on the diagnosis and treatment of acute peptic ulcer, although it is a disease capable of producing most serious complications: (a) hemorrhage, and (b) perforation, either of which may be fatal, and (c) morbidity, which may be the greatest of these; not to mention the item of mortality which is so definite in its finality.

Peptic ulcer has a high rating as regards mortality and morbidity in the chronic diseases, as it ranks tenth as a cause of death and twelfth as a cause of days lost from work.<sup>1</sup> It is estimated "that there are one and one-half million people in the United States above the age of 30 in whom peptic ulcers develop during a period of ten years."<sup>2</sup> The old adage "once an ulcer patient, always an ulcer patient" is sufficiently true to justify adequate therapy over a prolonged period of time to insure complete healing. Unfortunately, it is also sufficiently true that it consigns the patient to a hopeless, fatalistic attitude, and often causes the physician to adopt inadequate therapy and guidance.

The first step in therapy is the establishment of the diagnosis. Unfortunately all peptic ulcers do not provoke classical ulcer symptoms, so that a primary, provisional diagnosis of peptic ulcer is often not possible. Particularly is this true of the early or acute ulcer. At times when the symptomatology is not classical, so also the roentgenological and gastroscopic findings may not be typical in the acute ulcer, as are found in the old or chronic peptic ulcer. The roentgenologist often reports the findings of pylorospasm and extreme irritability of the duodenal bulb, simulating the motor spastic phenomena of active duodenal ulcer. Even the most careful mucosal relief study with compression and repeated examinations after the use of antispasmodics may fail to demonstrate a definite circumscribed lesion in the stomach or duodenum, thus producing the syndrome commonly known as pseudo-ulcer. These findings are of great interest and should always be borne in mind in view of the large percentage of these patients who return in as short a time as three months, with a well developed ulcer that has already passed from the acute to the chronic stage with the resulting morbidity.

These roentgenologic findings should not be construed as negative, as they are more often due to

an early acute ulcer, in which the destructive process has not progressed sufficiently to produce a demonstrable crater. A negative roentgen study certainly does not exclude ulcer, particularly a superficial one. Every chronic peptic ulcer starts as an acute ulcer; there is no other tenable explanation.

A review of the literature reveals comparatively little information regarding the healing time of peptic ulcer. It is well known that the acute ulcer heals more readily and with less scar tissue than the old or chronic ulcer; as early as 1863 Pavy discovered that acute ulcers produced in animals, healed rapidly in three or four weeks.<sup>3</sup> The same is true of acute ulcers of the stomach in non-ulcer susceptible human subjects.<sup>4</sup>

The healing time of peptic ulcer is important from several points of view; its length varies with the method of treatment employed and the age of the ulcer, whether it is acute or chronic.

The length of time that will be necessary to remain away from his business is of definite concern to the patient.

It would serve as a guide to the physician as to the method of treatment in the individual case, as well as offer an objective standard for comparison of new treatments.

Cummins et al.<sup>5</sup> In regard to the healing time on the basis of x-ray observations from the time a modified sippy regime was instituted until the crater disappeared estimates the healing time in a series of 69 gastric and duodenal ulcer cases at an average of about 40 days, with a range of 13 to 250 days. In my series of 125 cases of gastric and duodenal ulcer cases evaluated on similar x-ray observations, the healing time ranged from 14 to 28 days, with an average of 15.6 days on the continuous drip of aluminum hydroxide. This difference, of 24.4 days, is of definite economic significance.

Since all peptic ulcers do not provoke classical symptoms, it is incumbent upon us as physicians to evaluate properly the signs and symptoms of the earlier manifestations indicative of acute peptic ulcer. Particularly is this true when we are considering the problem of upper abdominal digestive discomfort, especially in the male, in the second to the fifth decade of adult life.

The evaluation of the early acute peptic ulcer is somewhat analogous to early acute or incipient pulmonary tuberculosis. It is a universally accepted fact, that incipient pulmonary tuberculosis re-

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CHART I: Age Range, Duration of Symptoms Prior to Treatment and Present Symptoms

Age	Symp. Dur.	Prior treatment	Symptoms
14 to 59 yrs.	6 mos. to 20 yrs.	Hyperacidity Nervous indigestion Gallbladder Peptic ulcer	Heartburn Gnawing epigastric hunger pain. Sour stomach, with food and alkali relief

CHART II: X-Ray Findings Before and After Definite Diagnosis

X-Ray findings	
Before Diagnosis	After Diagnosis
Pylorospasm Irritable spastic Stomach and Duodenum Hiatus Hernia	One week to 6 yrs. later showed gastric duodenal or pyloric ulcer Four profound hemorrhages

CHART III: Brief Resumé of Symptoms, X-ray Findings, etc., in Five Cases (21 to 25) of the Series of 25 Patients.

Patient Occup. Age	Sex	Previously Treated for	Duration of Symptoms	Symptoms	X-ray Findings	
					Before Definite Diagnosis was Made	At Time Diagnosis was Made
21 Electrician 28	M	Ambulatory treatment for peptic ulcer.	6 months	Epigastric discomfort	Pylorospasm. Spastic Duodenum. Small pyloric defect. Pyloric ulcer	10 months later definite pyloric crater
22 Housewife 23	F	Ambulatory treatment for peptic ulcer	2 years	Gnawing, burning, epigastric pain 2 h. p. c. and twice at night. Food relief	Pylorospasm. Negative for ulcer, on two occasions	Three weeks later definite irregularity of Duodenal bulb
23 Dentist 45	M	Nervous indigestion Urticaria allergy	3 weeks	Heartburn, epigastric pain 1 to 2 h. p. c. Food and belching gave relief	Hiatus hernia Pylorospasm Small ulcer crater in Duodenum	One week later severe hemorrhage. Large deformity of Duodenum
24 Merchant 36	M	Ambulatory treatment for Duodenal ulcer	6 years	Gnawing, burning, epigastric pain 30 minutes p. c. Food and alkali relief	Spastic Duodenum Pylorospasm	Twelve years later severe hemorrhage Definite Duodenal ulcer crater
25 County Agent 36	M	Nervous indigestion Anxiety neurosis	3 years	Nausea with a heavy gnawing, burning pain in epigastrium. No definite relation to food	Pylorospasm Spastic Duodenum	Three years later deformed Duodenal bulb Definite ulcer visualized at appendectomy

sponds more readily, with less permanent damage or scarring to the lungs, than when it is allowed to progress to chronicity, cavitation and fibrosis. Likewise the same applies to peptic ulcer; the more promptly adequate treatment is instituted, the less likely will there be resulting scar tissue, recurrence or obstructive phenomena.

There can never be any definite, satisfactory attack made on the ulcer problem, until we learn to recognize early manifestations of peptic ulcer; and to institute early adequate treatment with the same enthusiasm and skill as we do in the emer-

gency complications of peptic ulcer.

The early manifestations of ulcer may be any epigastric digestive distresses, which are more frequently described as gnawing, burning, heartburn or just a feeling of discomfort and usually, but not always, relieved by food or alkalis. It is not necessary that these symptoms be constant or of constant periodicity. The more promptly they are obtained, the better our ultimate results will be.

Roentgenologically, pylorospasm, the irritable spastic bulb or the pyloric end of the stomach practically always means a potential or early acute

peptic ulcer. Particularly is this true in the pyloric ulcer or the early mucous membrane erosion before a crater of sufficient depth has developed to be demonstrated. The roentgenologist always gives us this clue, which we too often ignore, and wait until a definite crater or markedly deformed bulb is reported. This is too late.

I have had occasion to observe a number of patients with symptoms of short duration whose previous x-rays showed an irritable, spastic duodenal bulb and pylorospasm, but three months later had a definite ulcer crater. Often the spasm obscures the early shallow crater and the diagnosis is not made.

With our present methods of treatment I am convinced that no ulcer, no matter how small or apparently insignificant, can be treated successfully when ambulatory. The chance of failure is too great and the result is too often disastrous. When a patient develops ulcer, that patient is seriously ill and there are enough failures under the most favorable circumstances. When a diagnosis is once established, a strict, thorough regimen should be instituted, with bed rest, mental rest and the most complete alkalization of the gastric contents by any good regimen with which you are familiar, whether it be the continuous drip of aluminum hydroxide, or the original Sippy regimen, or one of its many modifications.

#### CONCLUSIONS

1. Upper abdominal digestive discomfort, particularly in the male, associated with an irritable spastic duodenum and/or the pyloric end of the stomach and pylorospasm, should be considered as potential or actual acute peptic ulcer.

2. Acute peptic ulcer yields more readily to treatment than the chronic peptic ulcer.

3. The continuous drip of aluminum hydroxide requires about 60 per cent less time for healing, hence is of economic significance.

4. Early adequate treatment of the acute peptic ulcer offers a means of a definite, satisfactory attack on the peptic ulcer problem.

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#### Discussion

DR. GEORGE R. WILKINSON, Greenville, S. C.: There is scarcely any chronic disease that one sees more of than peptic ulcers of one sort or another. Perhaps an estimate of 6,500,000 people in the United States with peptic ulcers is not too great an estimate.

These people keep on coming back, because they live such a long time. The disease frequently lasts from the teens until they are in the eighties; so, in that span of time, they get to see many doctors. These people come in with a fearful expression on their face; most of them are tense. They can hardly wait to be seen. Despite the fact that they might have had the same difficulties for many years, they must be attended to right now.

Some time ago, a personal friend, who has had symptoms of duodenal ulcer for some thirty-odd years, came in bleeding again. Instead of being sent to the hospital, the patient was told to go on down town, get a good, big steak, take the bus and go on to a nearby resort, continue taking his alkaline mixture and belladonna, leave all of his people at home, and not communicate with them at all for a period of two weeks. When he left town, his hemoglobin was around 65; when he came back, it was 78 per cent. The expression on his face had changed. He was rested, calm and collected, and resumed his practice, only to come back in at the turn of the season with another, but lesser, episode.

There are three things in particular your attention might be directed to about this disease: (1) The disease is now occurring in women much more frequently than it formerly was seen, and occurs in women who are engaged in businesses hitherto almost exclusively reserved for men. (2) It recurs at gathering and planting time—in the fall and spring. Apparently we haven't been able to get the hay seeds out of our minds. Living in town doesn't seem to make any difference—the disease still comes at planting and gathering time. (3) As time has gone on, less and less emphasis is placed on dietary regimen.

Perhaps it would be well to make some changes in the diet, not on account of the disease itself, but on account of the average American's bad eating habits. It is enough to call to mind that people in the United States and Canada are the only people that the discussor knows of who eat just three times a day. This rigorous schedule instituted in slavery times and perpetuated in the factory system, though it is cruel and unphysiologic, has almost become a religious tenet.

Patients frequently come in and complain, stating: "I never eat between meals; why should I have pain in my stomach?" Better cooking, a wider spread in the variety of food, and five meals a day like they have in countries less dollar-minded, seem to suffice for dietary restrictions. Milk is tremendously overemphasized as a food. After a person is weaned, there is no particular reason why he should be put back on a puerile diet.

Anything that singles out these people and makes them different from other people with whom they associate tends to overemphasize their difficulties. We do not treat the arms and legs of people that have hemiplegia. Sometimes they lay open the skull and put some muscle over the brain to increase the local circulation, which is rational. The disease under discussion is not primarily a malady of the intestinal tract, any more so than the paralyzed leg is the seat of difficulty in apoplexy.

The approach to this problem must be on the psychic level. All the limitations put on these people which tend to break down their character, and further their infantile reactions, tend to worsen them. This is readily illustrated by what happens in the discussor's town, as, when cotton goes up, very few business people come in out of season with peptic ulcers. But when the market breaks, it is well

to reserve a few empty periods in the day's work, so as to be able to take care of the market casualties.

The increase of this disease is due to the lack of ability on the part of our people to adapt themselves to a more complicated way of living. It is up to us, as physicians, to increase their power of adaptability, and point the way toward peace of mind, even if we have to forget about their bellies.

DR. R. B. DAVIS, Greensboro, N. C.: Many years ago in Philadelphia at the Academy of Medicine Dr. John B. Deaver was discussing ulcers of the stomach with Dr. Rehbus. The latter made a beautiful presentation of the treatment by his tube, an antacid and meticulous regulation of the diet. Finally Dr. Deaver said, "Gentlemen, there is no difference between Dr. Rehbus and myself as to our opinion about ulcers except that he sees Cadillac and Rolls-Royce ulcers and I see Ford and Chevrolet ulcers. My patients have to get back to work and Dr. Rehbus' patients can stay in the hospital as long as they please. So Doctor, I assume there is no difference in you gentlemen's ideas about the ulcer question but the difference is that George Wilkinson is having to get patients back to work and Dr. Barnett can keep his patients in the hospital.

DR. R. E. RHODY, Greensboro, N. C.: Let me have Dr. Barnett's second slide. It was a very splendid paper and certainly the subject was *acute* peptic ulcer. Acute peptic ulcer is not chronic and Dr. Wilkinson has discussed of course the chronic peptic ulcer of the duodenum and stomach. I certainly would take issue with you, Dr. Wilkinson, on the handling of acute peptic ulcer. As Dr. Barnett has pointed out, when there is a definite ulcer crater, the ulcer has become chronic; therefore, I would suggest that when we find a spastic or irritable pylorus, perhaps some recoil of the duodenum, even though the radiologist is unable to find a deformity, that is potentially a peptic ulcer. Given a spastic stomach, tenderness and the resistance of the overlying muscles, even though you cannot demonstrate a filling defect, I would be inclined to report indirect evidence of a peptic ulcer on the stomach side or the duodenal side.

In the treatment of these ulcers, I do think the radiologist can be of very great help to the clinician. I have seen ulcers as much as two centimeters in diameter even in an elderly person. I remember one patient with a stomach ulcer sticking up almost crater size which entirely disappeared in three-weeks' time. Some of them do heal if you get them in the acute stage.

Some cases have been passed up as gastric neurosis by the radiologist, and the doctors sometime enjoy calling him and telling him of a certain patient who had to be put in the hospital last night with acute gastric hemorrhage, adding: "You didn't find any evidence of an ulcer." Doctor, if you look back you may find the radiologist reported that the patient had pylorus spasm and an irritable stomach. He did not find an ulcer but those findings, in my opinion, are very suggestive that it is the time to think about peptic ulcer and think about treating the ulcer. Perhaps the ulcer could be prevented if treated in that stage.

I don't think there is anything that Dr. Barnett had to say that would make me feel he was too radical in treating his patients. However, I don't know about hospitalizing every patient that has an ulcer, but he would be better off if he could be taken care of rather than disregard the symptoms or call it gastric neurosis.

As to routine gastric series, the radiologist can be of a great deal more help to the doctor if a history is sent the radiologist along with the patient. I get my own histories on the cases I see in my office, but on just a routine gas-

tric analysis the radiologist is liable to miss some of the very important features. A great many of the acute ulcers, even though there is a crater, will be missed if just anterior-posterior films are made. The patient should be placed in various positions, and so a great many duodenal ulcers will be found which would be missed if just routine anterior-posterior films are made of them.

DR. T. NEILL BARNETT (closing): I can't help but feel that Dr. Wilkinson recommends one of the most dangerous procedures that I know of in regard to handling peptic ulcers. I have seen too many of them die, and the idea that they are not going to die from hemorrhage is erroneous. Some of these people will bleed to death, in spite of all we can do, even with blood transfusions and other present-day methods that we have; even with surgical intervention fairly early, these people bleed to death.

Every time these people have a recurrence, it means that they are building up more scar tissue, more obstructive phenomena; and if they don't die with ulcer, a fair number are going to die as a result of radical surgical intervention. Even with the newer methods, some of these people are dying, maybe not at the time of operation, but afterward—some of intractable diarrhea, some as a result of perforation which gave us misleading abdominal findings. If we temporize with an ulcer, we are treading on dangerous ground, and if we let patients walk around with a little of this and a little of that and no reasonable adherence to diet, we are going to let those patients get into more morbidity and more mortality. I agree that a more liberal diet is advantageous.

A thing that has been of great help to us when we do have a restricted diet is the addition of the amino-acids. One of the advantages of the continuous drip of aluminum hydroxide is that we can give the amino-acids by the same tube. It is difficult to get some people to take them by mouth because of the taste.

Also, these people should be given adequate vitamin intake, particularly of B and C; especially is this true in the hemorrhage cases.

In regard to Dr. Davis' remarks, I don't think it is a question of the amount of money someone has. No one has to go without medical treatment, whether he is a pauper or a millionaire. These people can receive adequate hospital treatment one way or another.

I am indeed grateful for Dr. Rhody's discussion in regard to finger-point tenderness. This is a significant finding, but we should not lean too heavily on it. A good many ulcers are so situated that we do not get finger-point tenderness.

As to these people being nervous and psychotic, I see just as many ulcers in individuals with no nervous tension that we can elicit, as in those we call nervous. I feel that we should look on these ulcers with a more serious attitude, if we are to approach a possible solution of the peptic-ulcer problem.

I certainly appreciate the discussion.

#### MEDICAL EXPENSE COVER—A MAKE'S NEST\* .....

In the usual sickness, the doctor's bill for other than surgery is the least of the patient's worry. It is the hospital, nurse and cost of surgery that hits him amidships and causes him to dip into his savings or go to a personal loan company for aid. The doctor's bill is something that usually can be taken pretty much in stride and arrangements can usually be made to pay it in installments.

We believe that the average person realizes this difference and is not demanding medical expense insurance nor is he particularly attracted to it when it is made available.

\*Editorial Comment—*The National Underwriter*, Feb. 13th.

## Treatment of Compound Fractures in World War II

J. H. CHERRY, M.D., Asheville

**M**Y EXPERIENCES in this subject are limited to large army posts in the states, hospitals in the ETO, named general and veterans hospitals in the States. I am not personally familiar with the treatment of cases as they were handled in the Pacific except that I did have opportunity to carry out some reconstructive surgery on a certain number of Pacific casualties after they had been returned to the States. However, generally speaking, once the standard treatment was established after the onset of war, the routine therapy and results were approximately the same in all army theaters.

The over-all statistics of treatment of compound fractures in this war have not been completely compiled and released for publication. This tabulation is now being made under the direction of Col. Mather Cleveland, the former senior consultant in Orthopedic Surgery in the ETO. This final completed report of the history of Orthopedic Surgery in World War II will undoubtedly be most revealing and instructive, and I am sure that many of you will be interested in it.

Generally, battle casualties ran between 50 and 60 per cent orthopedic cases, including fractures and amputation cases. As the Orthopedic Consultant for the 15th Hospital Center (center composed of fourteen large station and general hospitals near London) I had an opportunity to observe the definitive treatment of a great number of orthopedic battle casualties coming from European fronts. For example, out of a nine months' period after D-Day, we treated approximately 100,000 cases in this hospital center alone. Forty-five per cent of all cases during this period of time were orthopedic cases.

The treatment of all fractures soon became more or less standardized in the ETO after earlier experiences in both Pacific and Mediterranean theaters. Standardized routines were directed from the Surgeon-General's office in Washington through the theater surgeon, who in the ETO happened to be General Hawley, who is the present medical director of the Veterans' Administration. General Hawley, although a regular army man (with all due respects to the regular Army Medical Corps) had the good judgment and initiative to surround himself with able consultants taken from leading medical centers in civilian life. For instance, the Chief Surgical Consultant was Brig.-Gen. Elliott Cutler, Professor of Surgery at Harvard University. I have already mentioned Colonel Cleveland,

Chief Orthopedic Consultant, who is an outstanding orthopedic surgeon of New York City. Every specialty was represented by able consultants who had direct access to the chief surgeon of the theater. They in turn had under them various consultants in each hospital center and in each army on the field of battle. You can understand that, once the war in Europe got under way, the professional services in the Army Medical Corps were fairly well organized and supervised not only from the administrative standpoint, but from an efficient professional standpoint. There were, of course, exceptions.

The routine treatment of battle fractures may be outlined according to the various echelons. Let us first take up the forward areas. Usually the first man to encounter the casualty was the first aid man attached to the line outfit. His duty was first to make the man comfortable by administering morphine for pain. The open wound was dressed after sulfanilamide dust had been administered locally. If the soldier was conscious, he was given sulfanilamide by mouth. If bleeding was found to be profuse, then a tourniquet was applied by the first aid man. Perhaps the most important duty was the splinting of the fracture usually applied where the soldier fell. The Thomas splint was used very extensively, and the Medical Corps men received intensive training in application of proper traction splints before they were sent overseas.

In the early part of World War I, it was noted that 30 per cent of those with compound fractures of the femur died as a result of shock before reaching the hospital. After about the first year of the war, a directive was sent out whereby all of these fractures were to be splinted before evacuation to hospitals. The mortality rate in these cases fell well below 5 per cent accordingly. After the casualty in the World War II was seen by the first aid man, he was usually taken by stretcher bearers to the first aid station where he would be seen by the first medical officer. In some instances, the first medical officer would go into forward areas to retrieve wounded men. Usually, he first saw the casualty at the first aid station. Here the casualty was given treatment for shock. I do not believe that anyone has over-estimated the value of blood plasma in the treatment of these cases. After shock therapy was initiated, the wound was inspected and the hemorrhage further controlled if necessary. The splint was readjusted, and the patient was made ready for transfer to the collecting station, and from there to a field or evacuation hospital.

In modern war, the field of battle would often become so fluid that occasionally the wounded man

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgewick Inn, Greensboro, N. C., March 3d and 4th.



would be taken directly from the field of battle to the field hospital. After reaching the field and evacuation hospital, treatment of shock was continued if necessary, and the casualty was made ready for surgery. In cases of compound fractures, he was usually anesthetized under intravenous sodium pentothal. All wounds were thoroughly debrided surgically. Shrapnel and other foreign objects were removed as far as possible along with loose fragments of detached bone, but there was no attempt made at deep probing of individual bullets and fragments unless they were lying upon an important structure. After debridement, a combination of sulfanilamide and penicillin was instilled locally, and vaseline packing was loosely applied. Occasionally the pack had to be applied tightly to control hemorrhage. The wounds were not sutured. There was a definite order against closing any wounds in these cases in the initial surgery, but debridement was carried out with the idea in mind that the wounds were to be closed in two weeks if possible either by secondary suture or by split-skin grafting or associated plastic procedures. *All fractures were immobilized by closed plaster of paris casts for shipment to the base hospitals.* Detailed reduction of fractures was not attempted unless the fragments were pressing on important structures such as nerves or blood vessels. Penicillin was started in all cases, 20,000 units intramuscularly every four hours, and was continued during evacuation to the base hospital. If an artery had been severed in an extremity and could not be sutured, the corresponding vein was usually tied off. Amputations were performed in cases in which the situation was hopeless so far as saving the limb was concerned. For example, in such cases where vascular gangrene had definitely established itself, or in anerobic infections such as gas bacillus or proteus which were far advanced, amputation of a fish-mouth guillotine type was performed at the lowest possible level, and the skin traction applied quite early to keep the soft tissues from retracting back over the stump of the bone. If anerobic infections were slight or moderate, wide and extensive incisions with resection of muscle groups were carried out rather than amputating the extremity, and an intensive regimen of serum and supportive therapy including blood transfusions was conducted associated with the surgery. These cases were followed very closely, and as soon as possible, air priority was given them to be flown back to the base hospitals. Booster doses of tetanus toxoid were given every American casualty, and tetanus antitoxin was given all prisoners of war patients because they had not received the preventive toxoid. The holding time of these cases in the field and evacuation hospital was between three to ten days.

As soon as the casualties left the field hospital by means of hospital trains, ships, air transport, and transient and port hospitals, they were transferred back as expeditiously as possible to the base or general hospital. En route, general nursing care was given with supportive treatment. Some cases relapsed into shock and more plasma or whole blood was necessary. Emergency surgery was performed en route if necessary to control hemorrhage or other unforeseen accidents. Frequent changes and meddling with dressings was discouraged. The large station and base hospitals in England numbered around one hundred, and for the first six months after D-Day, with some exceptions, the definitive surgery of fracture cases was carried out in England. By definitive treatment is meant that the fracture was reduced and immobilized until union was taking place and attempts were made to close soft tissue wounds as soon as possible. The routine was as follows within forty-eight hours after the arrival of the battle casualty:

All casts were removed from compound fracture cases, and those cases having displaced fractures of the long bones and were prepared for running traction by insertion of Kirschner wires in the proper locations. Following this, the wounds were inspected. If the wound could be closed by secondary suturing, this was carried out. In our hospital center, the per cent of primary takes in secondary suturing varied between 80-90 per cent. Early split skin grafting or the combination of secondary suturing and grafting was carried out in those cases where skin defects were large. If the wound were infected, and I might add that these were in the minority, the fractures were slung up in running traction anyway, and wet dressing and other local treatment carried out to clear up the infection. A certain number of cases required incision and drainage for abscesses; others required further debridement and sequestrectomy. Plasma and whole blood were given as indicated, and every effort was made to build up the general condition of the patient by the administration of iron, vitamins and proper diet. Penicillin was continued intramuscularly until the flesh wounds were healed, unless the organisms proved to be penicillin-fast. This chemotherapy was supplemented by administration of sulfa drugs by mouth as indicated. Amputation was carried out in indicated cases. The indications, of course, were the same as those observed in the evacuation hospital; however, in certain number of cases of gas bacillus infection or in vascular accident, the indication of amputation was not fully recognized in a lot of cases until they had been returned to base hospitals. In those cases of compound fracture in which traction was not indicated for the reduction of the fracture, casts were changed, and

the wounds were brought to healing as soon as possible for shipment to the States. In hand fractures, the principle was to start motion in fourteen days regardless of position of fragments or degree of healing. This was a radical reaction to the previous state of affairs in the early part of the war when a good many of the hand fractures were tied up in splints and casts sometimes from four to eight weeks, thus giving rise to extensive fibrosis and limitation of motion of the fingers. The final directive was good in principle to start early motion, but the fact remained that a good many of these cases developed mal- and non-union which, if the fragments had been held in position for the proper length of time under good supervision, could have been prevented.

I have mentioned that tetanus antitoxin was given to all prisoners of war. Despite this, we had quite a few cases of tetanus in prisoners of war. In my hospital, we had ten cases that I recall, but only one died due to the alertness of recognizing the symptoms of the disease as early as possible, and to the emergency institution of intensive anti-tetanic therapy by means of serum, excision of the focus of infection, sedation and intravenous fluids as indicated. *I know of no reported case of tetanus in the American Army in the ETO.* This was due to the efficient preventive toxoid which had been administered to all of our personnel.

In going back to fractures *per se*, these cases, as I have stated before, were reduced by means of skeletal traction and held in position until the fracture was frozen. This usually required from six to twelve weeks, depending on the location and type of fracture. Those cases in which large bone defects had been caused by severe wounds and in which non-union was definitely to be the result, traction was applied, with incorporation in casts to maintain length of extremity, wounds were closed as early as possible, and these cases shipped back to the States within a short time. In all cases, every attempt was made to heal wounds before shipment to the States, and every fracture in the healing stage was transported by means of proper cast. In the 15th Hospital Center, in a five-month period after D-Day, 5,000 cases of compound fractures were shipped back to the United States. Ninety-four per cent of all these cases had their flesh wounds healed either by means of secondary suture or skin grafting. Only 4 per cent of these cases had frank osteomyelitis. The remaining 2 per cent were not completely closed because of very extensive soft tissue defects requiring further plastic surgery. The over-all death rate of all cases once the patient reached the hospital, field of otherwise, was less than .3 of 1 per cent.

Before discussing treatment of these cases after they reached the States, I might emphasize the

role played by overseas convalescent hospitals and centers in the rehabilitation of men with the less severe fractures and injuries.

By means of surface ship and air transport, cases were sent back to named general hospitals in an area of this country which was designated as the Zone of Interior. The fracture cases were roughly divided as follows and treated accordingly: (1) Cases requiring no further surgery. Usually the casts were changed and the cases allowed to go through the required healing period. Following this, physiotherapy and rehabilitation were carried out. If it were thought that the patient could be returned either to limited or general duty, he was usually sent to a convalescent hospital or to the conditioning section of a named general hospital where he would be rehabilitated. After V-E Day, most of these compound fracture cases of the large bones were given medical discharges especially if they had had any osteomyelitis associated. (2) Cases in which no further bone surgery was necessary, but in which further plastic, nerve or tendon surgery was required, and I might add that in each service command, there were usually centers designated for the treatment of these various specialized injuries. (3) Cases in which soft tissues were healed, but in which reconstructive bone surgery was necessary. The procedure might be anyone of the following: bone grafting with or without plating, utilizing either massive tibial, iliac or fibular grafts; joint arthroplasty; joint fusions, and the other combinations. (4) Cases in which the combinations of bone, plastic, nerve or tendon surgery were indicated. (5) Cases with osteomyelitis and these were in turn divided into the groups according to the treatment indicated, the first group only in which conservative therapy consisting of further immobilization, penicillin, and general building up of the patient was indicated. Those cases in which sequestrectomy was necessary as an adjunct to routine osteotherapy. After the healing of these cases in which bone infection was present, then the combinations of all the various reconstructive procedures were carried out as indicated. All amputation cases were sent to amputation centers for revisions and applications of prostheses. The amputation center in this service command was Lawson General Hospital in Atlanta.

(The essayist presented slides.)

The first case is that of a compound fracture-dislocation of the elbow; the second is that of a compound fracture of the tibia with non-union; and the third, fracture of the femur in a prisoner of war in which the Kuntschner nail was used.

The following conclusions are my own personal ones, but I believe that most of the orthopedic surgeons who took part in the care of war fractures agree with them in principle.

(1) I do not think that compound fractures of the humerus should have been routinely treated by means of skeletal traction. I observed a good number of cases in which I am sure that, if simple manipulation at the time of the first shoulder spica had been carried out and the arm allowed to remain in this spica without changing it at the base hospital, the result would have been good union. Whereas, a good many of these cases went on to non-union and for no other reason than that the callus was disturbed and the fragments pulled apart by means of skeletal traction at the critical two-to-four-week period.

(2) Contrary to the directives issued in the ETO against the use of hanging casts for treatment of fractured humeri, I believe it is perhaps the simplest and most effective method in treating these cases, and should have a wide application in civilian practice. Before the directive, I divided my humerus cases in prisoners of war into two sections, making a total of about forty cases of fractures of the humerus. Half of these cases were treated by the hanging cast method, and the other half by skeletal traction. The only cases of delayed and non-union were observed in the cases treated by skeletal traction. It was noted that hanging cast cases seemed to heal quicker and the patient was much more comfortable, being up and around while healing was taking place.

(3) It is my opinion that, in an effort to stress early motion in all types of fractures, the ordinary good principles of allowing firm union to take place was often disregarded. This was especially noticeable in those cases in which the fracture had been reduced overseas, the wounds healed and the patient shipped back to this country in good comfortable casts. In an over-eagerness to start early motion, there was a directive from the Surgeon-General's office to the effect that the casts were to be removed from the femur cases and that they were to be placed in skin traction. I observed a good many cases in which early union had been taking place while the extremity was encased in plaster but in which the fragments slipped after the removal of cast and inadequate skin traction had been applied to the extremity.

(4) The majority of compound battle fractures should not have an early open reduction either for plating or grafting. A period of three months should elapse between the time of healing of the wound and time of open operation despite the administration of penicillin and sulfa drugs. This was learned from bitter personal experience, which was in agreement with the experience of others.

(5) In cases of compound fractures in which soft tissue defects had been extensive, bone grafting procedures should be deferred until a good soft tissue coverage has been obtained either by

means of full thickness or pedicle or tube skin grafting. We found that split and pinch grafts, especially in tibial cases, were very unsatisfactory and the tendency to break down following bone grafting procedures was pronounced. This does not mean to say that early split grafting is not a good procedure in order to quickly close potentially infected flesh wounds.

(6) Generally speaking, the treatment administered to compound fracture cases in World War II by the United States Medical Corps was of a superior nature as borne out by the results so far observed. Further, American surgery proved itself far superior to that of the enemy and even our own Allies.

(7) Amputations were the great exception rather than the rule.

(8) The incidence of gas bacillus infection in compound fractures as compared to World War I was astonishingly small.

(9) Although penicillin and the sulfa drugs played an important role in controlling infections in these cases, the most important factor in their prevention and control was the observance of standardized and routine good basic surgical principles.

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#### CHANCE OF TUBERCULOSIS NO GREATER IN STUDENT NURSES THAN IN OTHER YOUNG WOMEN

(E. R. Levine, Chicago, in *J. Lancet*, April)

A study was made of 880 young women of the Michael Reese Training School for Nurses between 1940 and 1946. The average age on entrance was 18; the great majority were from rural areas and small towns.

A negative reaction to 1:10 tuberculin was found in 762 persons, 87% of the total; 13% showed a positive reaction.

The incidence of primary infection during the three years of study was 15%, giving a total of 28% positive tuberculin reactions on graduation.

There were three cases of reinfection tuberculosis. This is an incidence of 0.45% of the 670 cases followed for three years or more, 0.34% of the entire group of 880.

Tubercle bacilli were demonstrated in only one of these cases. There was no mortality.

This study to the following conclusions:

The incidence of tuberculosis in young people is not increased by a previously negative tuberculin reaction.

Negative reactors are not more likely to develop progressive tuberculosis following the primary infection.

Protection of nurses is no justification for the refusal to admit cases of tuberculosis to a general hospital since adequate isolation technic will prevent infection.

Vaccination with B. C. G. is not indicated for student nurses.

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PEPTIC ULCER.—In 4,079 cases collected from the literature, Mulsow found that 10.5 per cent occurred in persons above the age of 60, which varies but little from the age distribution of the general white population.—Kiefer & McKell, in *J. A. M. A.*, Apr. 12th.

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I HAVE seen acute retention of urine in a young man due to a staphylococcal abscess in the prostate gland secondary to a boil on his neck.—W. D. Doherty, in *Guy's Hosp. Gazette*, Feb. 20, 1946.

# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### OF INSOMNIA

WITH THE FAMILIAR things of life man is least familiar. About sleep, for example, man knows little. There is scant evidence that man is deeply concerned about the nature, the significance and the necessity of sleep. Yet it may be true that all living things, animal and vegetable, sleep. At this spring season of the year there are obvious reasons for believing that most vegetable life has been for several months in a condition of lessened activity not unlike that of the animal in sleep.

Yet little has been published about sleep in man. I dislike the word research, but I know of little scientific investigative work done on sleep. I know of no one whose opinion would interest me who would be willing to undertake to define sleep. Perhaps few phenomena, few things, can be defined, because of the limitations of man's knowledge.

It is probably true that ignorance will restrain one person from speaking yet stimulate another into endless polysyllabic verbalizations. Not even the Editor of this Monthly compendium of knowledge would delimit the latter tendency to those who are concerned about the digressions of human thinking.

If it is be conceded that not much is known about the human mind when asleep, it must not be surprising that even less understanding exists of that state called insomnia. I do not know what sleep is; I do not know the purpose it subserves in the life of man. Because it is, I assume that it may be a physiologic and a psychologic necessity.

Throughout the ages there have been intimations by the thoughtful that sleep is a restorer and that without its periodic recurrences man might become unable to retain his mental normality or even to continue to live. If sleep in man is not a necessity, much of man's life has been wasted in sleeping.

In sleep man ceases to be consciously conscious of his daily troubles and anxieties. Sleep detaches man from conscious realization of reality—of the duties and responsibilities and troubles of everyday life. It may be true that in sleep man tends to return recurrently for a brief period towards that mental state that characterized his existence when in his mother's womb. In that condition man is conscious of no danger, of no responsibilities, of no duties, nor even of self. Were man deprived of the expectation of sleep for a year, the morticians would have no time in which to sleep and the

grave-diggers would be unceasingly busy. Whatever the form of government may be which collects from man taxes and prescribes his civic duties, in sleep and in death a universal democracy prevails. How simple, how serene, how safe man seems to lie in sleep and in death!

Sir Thomas Browne could not entrust himself to sleep, so like death it is, without prayer. And between a dead man and a sleeping man Cervantes could see little difference. Richter spoke of sleep as the antechamber of the grave. Shakespeare, who was probably acquainted with insomnia, called downy sleep death's counterfeit. Colton observed that sleep flies from Hell and is excluded from Heaven. If his statement be valid, the insomniac will eventually exist altogether without sleep.

Poets and philosophers throughout the ages have likened sleep to death. That state called sleep, whatever it may be, causes man to fear that he may fall into it or be denied its blessings. Yet it is not difficult to understand how man longs each day to escape from consciousness into unconsciousness, even at the risk of not regaining consciousness.

There must be many individuals who sleep relatively little, yet who do not complain of insomnia. Although I do not know what sleep is, I feel able to appreciate the difference between sleeplessness and insomnia. Not sleeping is sleeplessness. One may continue awake through choice, either with or without effort. If one's being awake causes neither disapproval nor uneasiness, the condition is radically different from insomnia. The individual vexed by insomnia not only secures too little sleep, but the attitude towards the too-little sleep is painful and obsessing. The too-little sleep becomes the dominant daily thought of the insomniac.

The dynamic feature of the situation is fear, of the anxiety type. The person who thinks of self as the victim of insomnia lives with self exceedingly incompatibly. Portions of such a person's inner self are in profound conflict with other portions of one's self. The basic cause of the conflict within the victim of insomnia is probably never simple, probably seldom one thing.

The cause of the inability to sleep is anxiety, the fear that sleep will not come; but the reason for that fear is usually functioning far beneath the level of the individual's consciousness; the consequence is that the cause of the insomnia is kept out of the person's every-day consciousness. The events of the day in effect never become detached from the individual. They live while the individual lives, most of them buried so deep in the subconscious, or unconscious, that the individual does not know that they have been retained. The events exist in effect below the level of consciousness and far below the word-level. Though memory seems

not to know they are there, the body knows of their existence and of their compelling influence in behaviour—when one is awake; when one is asleep, through dreams.

The human mind, within the domain of the unconscious, may be altogether as active during so-called sleep as during the activities of the day.

The expression of such speculations have been evoked by a piece in *The Psychoanalytic Review* for April, 1947, by Dr. Simon Rothenberg, entitled "Psychoanalytic Insight into Insomnia." All of the 28 pages of the thesis are well worth careful study. Dr. Rothenberg does psychoanalytic practice in Brooklyn. In the contribution he sets forth in detail his study over a period of several months of the condition of two women in midlife who came to him complaining only of insomnia. Eventually he found out by patient investigation both for himself and for the two patients why they had become unable to sleep. He was probably not surprised. But the two patients were all but astounded when with their coöperation he exhumed from the subconscious domain of each many buried treasures, some of which had come to possess only pathologic value.

In days long gone by, each patient had participated often in that warfare within each spoken of sometimes by theologians as the conflict between the spirit and the flesh. Recollections of carnal and of other indulgences had been pushed so far down into the subconscious as to occupy no place in the every-day word consciousness. But in the deep-seated, spacious domain of the subconscious conflicts raged between the flesh and the spirit and one, but only one, of the symptoms was insomnia. When each patient had looked upon her resurrected past, each with the confession of David to Nathan: "I have sinned," there was peace within; then sleep came again.

Man, and woman, probably prefers to be decent and honest. Emotional and mental and spiritual expurgation are often as helpful, and as painful, as physical emesis and diarrhea. Such a procedure may constitute a prerequisite to a rebirth.

I infer from Dr. Rothenberg's disquisition that the symptom insomnia cannot well be understood without a thorough understanding of the individual's life. And few, if any, would willingly fully disclose themselves either to self or to another—even to a doctor. We are probably dreadfully dishonest, even though we may think we should like to be honest.

*The Psychoanalytic Review* comes only quarterly. It is probably read by a relatively small number of subscribers. It deals with the inner man, the only man and the only woman of consequence. And many doctors and some lay people should read *The Review* regularly. I feel that I can some-

times understand what I read in it. Three times I have read Dr. Rothenberg on Insomnia. I have in consequence a better understanding of the unceasing difficulty that man, and woman, experiences in living with self. The experience is not unlike that of the person under cross examination in the witness chair in the court room. Which is the worse or the better state: to possess a conscience or not to possess a conscience? That attribute Dr. Rothenberg speaks of by its psychiatric nickname—the super ego.

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#### ACUTE INTUSSUSCEPTION IN INFANCY AND CHILDHOOD (F. H. Magney, Duluth, in *Minn. Med.*, March)

This study is based on the cases of acute intussusception coming to operation in St. Mary's and St. Luke's Hospitals from 1921 to 1945. There were 56 patients who underwent 58 operations, recurrence in two cases necessitating a second operation. Both of these patients survived.

The youngest child in this series was 7½ days old, the oldest 12 years; 74 per cent were less than one year old, and the highest incidence came at six months.

Intussusception appears to occur especially to the healthy and well-nourished child. The history and physical findings were so convincing in the majority of the cases that the laboratory was not called upon for assistance.

Drop ether was the anesthetic of choice as apparently it is safest and gives the best relaxation.

The 58 operations were followed by 15 deaths, an overall mortality rate of 25.9 per cent. It is gratifying to note the great improvement that has been made in the management of these cases during the last 15 years. The first 10 years showed a mortality of 46.7 per cent as compared with 18.1 per cent during the last 15 years. In the last five years 17 cases were operated upon with only two deaths, a mortality of 11.8 per cent.

The cardinal symptoms were intermittent colicky pain, vomiting and bloody stool. These were present in 73 per cent of the cases.

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REHABILITATION IN TUBERCULOSIS should begin no later than the day the patient enters the sanatorium, because from the beginning he must realize that there is still a future for him. This knowledge acquired early in illness makes a great difference in his morale and his manner of adjustment to a changed way of life.—*Pub. Health Rep.*

## HISTORIC MEDICINE

### REMINISCENCES OF J. MARION SIMS IN PARIS

ALL OF US are greatly interested in anything of consequence about Marion Sims. The privilege of learning of his kindness to a medical student in Paris, to an unhappy confederate surgeon in London, and of many other noble acts of his which are not recorded in any of the several Sims biographies, is herewith tendered our readers.

The Association from whose Transactions this account is derived<sup>1</sup> some years ago contracted its name, and has since been the Southern Surgical Association.

1. Edmond Souchon, New Orleans, in *Trans. Sou. Surg. & Gynec. Assn.*, 1895.

In the fall of 1860 I entered the old L'Hopital Charité as a benevolent student in the service of the world-renowned Velpeau. It was my beginning in the study of medicine.

After several months I had managed to be on as good terms with Professor Velpeau as a little, insignificant nobody like myself could be with such a magnate.

One early morning in October, 1861, as I was about entering the gate my attention was attracted by a man who was coming toward the gate from the opposite direction. The stranger came up to me and, after a suave bow, said, "Will—Professor—Velpéau—be—here — today?" I answered in English: "No, sir; Professor Velpeau is absent on his vacation, and will not return before two weeks." The beautiful face brightened. "Where are you from," said he, "that you speak English?" "I am from the South—from New Orleans," said I. "Why," said he, "I also am a Southerner; I was born and educated in South Carolina, and I lived a long time in Montgomery, Alabama."

I showed that Doctor around the hospital, and finally asked him what he had come over here for. "Well," said he, "I am Dr. Marion Sims, who has invented a method of operating for vesicovaginal fistula with almost invariable success." We had never heard of Dr. Marion Sims in Paris. Furthermore, we all knew that nobody knew anything about vesico-vaginal fistulae except Professor Jobert de Lamballe, of the Hotel-Dieu, and even under him, vesico-vaginal fistulae were cured only exceptionally.

Doctor Sims said he had a letter for Professor Velpeau from Dr. Valentine Mott, of New York; that he was anxious to see the Professor, to get a case to operate on before him. "Well," I said, "the Professor will be here in some 15 days;" soon enough for your good, I thought to myself.

He had invited me to dinner upon our first meeting, and I went there once or twice to give him all the points about those men he was most likely to meet. He was all the time sanguinely confident, and looked so sweet, so modest, so magnetic that I began to feel a strong drawing toward him, and by the time Velpeau was to return I was wound up to a high pitch and as eager as my friend that he should have a case soon.

Finally Velpeau arrived, and I sent word to Dr. Sims immediately; soon he came to present his letter, which Velpeau read at once and fluently; but when it came to speaking to Dr. Sims he was at a loss to express himself, and looked around for me. Velpeau still bore the effects of his lowly, rough, peasant birth and he was not to Sims exactly what he should have been. The name American at that time in Paris always evoked the name of Barnum. After a very few words Velpeau said to me: "Well, what does he want?" I translated

the sentence to Sims, who at once modestly but firmly answered: "I want a case to demonstrate my operation, if the Professor will be kind enough to procure one for me." "All right," said Velpeau, "I will get him one." Then he turned around, without a handshake or a word more to Sims, and went on with his visits.

At last the case came!

By this time the whole of the old Quartier-Latin had heard of the news, which had rapidly spread from hospital to hospital. On the day of the operation the famous little operating theatre in the old Charité was overcrowded with students, and the arena below crowded also with the most distinguished professors of surgery of the French capital: Velpeau, Nelaton, Ricord, Malgaigne, etc.—all but Jobert de Lamballe, who would not come.

Dr. Sims called on me to translate for him as he spoke.

The operation was done in comparatively no time. When he said it was done a salvo of applause broke out from the benches; the professors rendered justice to the manner in which the operation had been performed, while reserving themselves mentally until the day when the sutures should be removed. Dr. Sims attended to that case himself in the ward. On the ninth day the amphitheatre was again packed to witness the removal of the sutures; the case was pronounced cured, and this was confirmed by the French surgeons, who congratulated Dr. Sims. The enthusiasm of the French students far exceeded their former outburst, and, since they could not very well carry Dr. Sims on their shoulders in triumph, they took hold of me in his place, and the resident students carried me to their messroom to breakfast with them, a great and unprecedented honor in those days, for I was but a simple, insignificant first-year student!

The second patient, a short, fat, stumpy little woman, refused to be operated upon unless she was given chloroform and put fast asleep. This much annoyed Dr. Sims, because in those days it was thought unsafe to place a patient on the left side to give chloroform to the extent of keeping her perfectly still—and nothing could be done otherwise—for such a long period as an hour or two. Her will had to be done. It all went well for a good while; but all at once the breathing became stertorous and the face blue, and the pulse flagged. The operation had to be suspended until she recovered. The operation was then resumed, but soon had to be stopped again for the same reasons. It took Sims's whole nerve and skill to bring the operation to completion. During all that time the distinguished guests present said and did nothing, leaving Sims and his assistants to do all the fighting and get all the odium in case of failure, but all the credit in case of success. At one time I

spoke to Velpeau to ask him what he thought of the condition of the patient; he shook his old, silvery head, and I imparted to Sims what I took that to mean, that he might make the best of it. Finally the patient was put to bed. At the end of the usual time this case was also pronounced a success.

Two weeks later another case was recorded as a complete success.

Cases followed one another wherever the Doctor went. In Paris, London, Germany, etc., he was kept busy with fistulae and other female cases. Wherever Sims went he coined money, although he incessantly, willingly, and kindly did much charity work. He made a host of friends among the surgeons of all countries, and it could not be otherwise with his gentle, kind, unpretentious ways.

He spent his money lavishly; all the needy Southerners, and the Northerners, too, then in Paris were recipients of his generosity. One day, in his house in the Rue de Balzac, we were alone in his studio, when he at once asked "How are you getting along here?" "Well," I said, "I am starving as slowly as I can. All resources from home have ceased since the war has begun, and but for a little position of \$20 a month which Professor Velpeau's influence obtained for me, I would have succumbed to hunger and cold by this time." He replied: "Anything you need I will be glad to give you; I am making plenty of money now." I thanked him very much, but gratefully declined any assistance, because, if I borrowed, I intended to return it some day, and just then it was problematical if I should last to return and pay any indebtedness. However, he would not be content unless I promised him to come to him if ever I needed any help.

The following year was the time for me to prepare for my competitive examination to be admitted a resident student in the Paris hospitals. That is a very hard competitive examination, and it requires all the time of any student from early morning till late in the night to succeed. Very few succeeded the first time: usually it required two trials at one year's interval. I had to do it in one year or quit the study of medicine. I needed, therefore, every moment of the days of the year of preparation, and therefore it was necessary for me to renounce my little situation. Dr. Sims had once proposed to assist me, but that was nearly two years ago.

I called in the middle of the day, thinking I had then a better chance of meeting him alone. "I will help you certainly: how much do you want?" "Thirty dollars per month will suffice," said I. "What!" said he, "a dollar only a day. Oh no; take two." I thanked him gratefully, but consent-

ed to accept only one dollar and a half a day, remarking that I might never be able to return that little even. He gave me a check for the first month in advance, and also for several hundred francs to buy some little furniture and clothing, which he said I needed. From that time the check came every month, no matter where he was—in France, England, Germany, or America. He never forgot it once, and when it happened very rarely that he was a few days behind, he would write a few words of apology.

The Doctor's reputation had acquired such proportions that the French Government presented him with the decoration of Knight of the Legion of Honor, the highest ambition of all Frenchmen. It so happened that I was present in the forenoon of the day when the mounted dragoon from the State Office brought the large, many-sealed envelope containing the brevet. It was the cause of great rejoicing in the family and among his friends. I was dispatched to go down to the Palais-Royal to buy the ribbon. I chose one and brought it home, when I had the happiness of being asked to place it myself in the buttonhole over his noble and good heart.

Another notable instance of his great kindness is, when upon a visit through a London hospital the physician in charge told him that he had in his ward a Confederate surgeon who, heart-broken, had left the down-trodden South, worked his passage through to London by acting as steward on board ship; but after he had reached London, his little money, his feeble health, his crushed heart had all given away, and he had stranded in a London hospital. Sims at once went to him, recognized a friend from the same grand State of Alabama, cheered him, saw him well, and brought him to his own house and assisted him back home. All this I was told by the man himself, who, upon his return home, became a most noted teacher of medicine in one of our famed Southern medical colleges.

I remember Dr. Sims in only one case of sickness. He was alone in the Grand Hotel in Paris, without any of his family with him, when he sent me word to come and see him. He had been suffering for some time from a repetition of an attack of pain and swelling in the right iliac region, and seemed concerned about his condition. Surely, if it had been a few years later he would have been appendicitized. But, thank God, he got well without the knife.

It was my distressing lot to be present at his house when the sad news came of the death of his eldest son, Granville. Granville had torn himself away from Paris and his family and gone to Havana to find a chance of running the blockade. He was there waiting for his opportunity, when he was attacked with yellow fever and succumbed very quickly.

Doctor Sims was surely one of the most magnetic men I ever met, and he made such a deep impression on me by his genius, his energy, his courage, his goodness, his kindness, and his gentleness that ever since he has been the model and guiding-star of my life.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### CONSERVATIVE RENAL SURGERY

IT REQUIRES a great deal more knowledge and patience and courage to save a kidney than to remove one. We sometimes reject the idea of a conservative operation upon the kidney because we are afraid of a postoperative failure necessitating a second operation.

Riba<sup>1</sup> has made a fine contribution to this subject. Many of his excellent points are made available to the readers of this journal.

Conservation of renal tissues is particularly important in children or young adults, as in these regeneration of kidney tissue is much more ready.

Renal tuberculosis or tumor demands removal of the entire kidney; also a functionless, destroyed kidney, or one for which the blood supply is defective and surgery is indicated. Severe trauma kidney may necessitate nephrectomy, especially when the pedicle is injured. The same is true of advanced unilateral cystic disease when producing symptoms, and of a polycystic kidney for persistent hemorrhage, or malignancy. Unilateral kidney dysfunction causing hypertension should be treated by nephrectomy providing the remaining kidney is normal.

Many cases of hydronephrosis with ureteropelvic obstruction are found in children and young adults. Reconstruction of the renal outlet with or without pelvic resection may save the kidney. Even though the opposite pyelogram is normal, incipient uretero-pelvic stricture may exist, and cause serious trouble in years to come.

We are still removing too many kidneys for renal calculi. When calculi have formed in both kidneys extreme conservatism is demanded, in keeping with good judgment.

Every patient who is to be operated upon for a urinary calculus should have a scout film made immediately before going to the operating room. In many cases this will save the patient operative trauma and save the urologist great embarrassment. After the kidney has been mobilized a film of the exposed kidney with a portable x-ray unit will reveal many a case of residual calculi.

Stones locked in the minor calices by a tight infundibulum can be removed more easily by a nephrotomy incision. In these cases the conserva-

tive operation consists of resecting a small portion of the lower or upper pole so as to include the dilated calyx and the stone or stones.

In duplication of the ureter and pelvis, one pole destroyed, every effort should be made to save the uninvolved portion of the kidney if the blood supply permits.

Unipolar solitary cysts can usually be resected without removing the entire kidney. In case of painful movable kidney with obstruction of the upper ureter, or great hyperemia without urinary obstruction, nephropexy should be performed without decapsulation. Renal sympathectomy at the same time gives a much less painful convalescence.

The case of a patient having only one kidney requires that we be most cautious in our recommendations.

Handling of a kidney during an operation will cause postoperative swelling, may cause anuria. Incision of the renal capsule from pole to pole on the convex lateral border will allow for this swelling. In the high-lying kidney, the removal of the 12th rib will greatly facilitate renal exposure and thereby minimize the operative trauma.

Two-stage nephrectomy has saved many a patient's life.

Pre- and post-operative administration of the proper chemotherapeutic agent permits the performance of conservative operations upon the kidney which were impossible only a few years ago.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

### OBESITY AND ITS MANAGEMENT

A CHEERFUL and cheering account<sup>1</sup> of what to do about obesity is passed on to you, as to its significant features.

During treatment, patients sometimes complain of listlessness, fatigue, emotional irritability and an irresistible craving for sweets; the taking of a small amount of sweets will give prompt relief.

A diet almost totally lacking in fat may cause a vitamin deficiency since fat is necessary for the absorption of vitamins A, D and E. These vitamins should be supplied and the requisite minerals must also be given.

One quart of fluid a day is the amount permitted. The sodium chloride intake should be strictly limited.

Benzedrine sulphate does not directly cause a loss of weight; it curbs the sense of hunger and thus enables the patient to endure a sub-maintenance diet.

We do not recommend the increase of physical activity, such as regular exercises. The appetite is usually increased thereby more than the energy

1. M. B. Green & Max Beckman, New York, in *Med. Rec.*, April.

1. L. W. Riba, Chicago, in *Ill. Med. J.*, March.



output.

A history should elicit information on hereditary tendencies, habits, environmental influence, time of the onset of the obesity, diet taken, the nature of past treatment and previous endocrine studies. Look for special fat deposits, distribution of hair and general bone structure. Make a basal metabolism test, electrocardiogram, a differential blood count, urine analysis and blood determinations, if indicated. He or she must be convinced of the ease with which weight loss can be safely accomplished. Printed instructions are given to refresh the memory.

The caloric allowance ranges from 600-1000 calories for active reduction, on a diet which contains  $\frac{1}{2}$  gram protein per kg. ideal weight. The remainder of the calories are derived from low-percentage vegetables, fruit juices, salads and small amounts of fat.

From the beginning of treatment, benzedrine sulphate is prescribed from 5-50 mg. a day, average 25 mg., depending on the reactions and results obtained. We have administered the drug for 18 months, because most patients discontinue treatment from time to time. The benzedrine sulphate is usually taken four times a day: on arising, before lunch, during the mid-afternoon and one hour before dinner. The dosage varies with the time of day when hunger is most acute. As a rule, 5 mg. upon arising; 10 mg. for the second dose; 10 mg. for the third, and 5 mg. before dinner. Patients taking only coffee and juice in the morning may skip the breakfast dosage. If a stronger dose is required before dinner, phenobarbital is added, average one-half grain. No sleep disturbances nor other harmful effects have been noted from the use of the drug.

Benzedrine is contraindicated in cardiovascular diseases; especially in hypertension with myocardial damage. Very small doses of benzedrine sulphate caused no untoward effects in our patients suffering from hypertension. In 58 per cent of the patients in this series hypertension was strikingly reduced concurrent with the weight reduction.

We reduce the dose of benzedrine sulphate by about 10 mg. a day per month, finally a 5- or 10-mg. dose. Thyroid extract is added ( $\frac{1}{2}$  to 4 grains) a day, only if indicated by the b. m. r. A potent multiple vitamin preparation and minerals are added from the beginning of treatment. Patients are seen weekly or bi-weekly.

The average weekly weight loss is 2.02 pounds; first week 6 to 7 pounds.

#### PEPTIC ULCERS TREATED WITH A HIGH-PROTEIN, HIGH-CALORIE DIET

THE POPULAR medical regimens for peptic ulcer are principally diets low in proteins and in calories.

1. V. J. Vinci *et al.*, Middletown, Conn., in *Conn. Med. J.*, April, 1946.

Vinci *et al.* have had favorable experience with a quite different diet.

A high-protein, high-calorie diet has been used for the past 18 months in the management of peptic ulcers. Thirty patients have been studied, all except one in the Middlesex Hospital. This plan was adopted for all peptic ulcers, complicated or uncomplicated. It was used with gratifying results in the preparation of the patient for gastric surgery.

Of this group all had radiographically demonstrable and clinically active peptic ulcers. We did not attempt nitrogen balance studies. Our interest was centered on the clinical and radiographic improvement of these patients. This entire group is having careful follow-up study.

Most of these cases did not respond to what was considered adequate ulcer treatment in the conventional manner. Many had complications.

The patient with peptic ulcer may be assumed to be in a state of protein depletion even though his plasma proteins be found in the normal range. He is usually underweight, lacks his usual stamina and has been on some sort of a diet, either self imposed or prescribed, for some time. This diet is always low in protein because the foods rich in protein aggravate the symptoms. He may also have had obvious or concealed bleeding. Hypermotility of the intestine is a frequent finding and whether or not diarrhea is present the limited amount of protein ingested is probably not completely assimilated.

The greater part of the protein used in our series is obtained from Amigen, a food made from casein by digestion with pork pancreas. The pancreatic enzymes convert the casein and the proteins of the pancreas itself largely to amino acids and to a lesser extent into small peptides. It therefore does not require further cleavage. It is promptly absorbed after ingestion and is metabolized as amino acids. It brings about a positive nitrogen balance and aids in increasing weight.

The complete diet consists of  $7\frac{1}{2}$  ounces each of Amigen and Dextri Maltose, 27 ounces of water, 24 oz. each of milk and 20-per cent cream—given in 5-oz. feedings at hourly intervals from 7 a. m. to 9 p. m. To relieve the monotony 90 grams of strained cooked cereal is given at noon and at 6 p. m., and one soft-boiled egg is given at 8 a. m. and at 3 p. m. Vitamins are given in adequate doses separately, usually by mouth. One of the commercial preparations of colloidal aluminum hydroxide is used if desired, but since the Amigen is a natural antacid no particular advantage was noted when the antacid was used. No other medication was given. The patients were kept at almost complete bed rest.

The diet, without the egg and cereal feedings,

contains a total calorie value of 3760; with the cereal and egg feedings, a total calorie value of 4078.

In all uncomplicated cases treated in this manner the relief of pain was evident.

A group of 30 cases of peptic ulcer has been treated by us during the past 18 months with a high-protein, high-calorie diet. Twenty-one of these cases were considered medical problems and this plan of treatment brought rapid improvement clinically or radiographically or both within three weeks. Six of these patients had bleeding and two had had massive hemorrhage at the time of admission. Those with massive hemorrhage were given blood transfusions, but the diet was started a few hours after admission. There was no mortality in this group. Nine of the cases were considered surgical problems, each presenting a definite indication for surgical intervention. Eight had gastric resections and one, because of advanced age, had a gastroenterostomy. All were prepared for operation by this diet and its use lessened tissue edema, made the surgical procedure technically less difficult and appeared to favorably influence the post-operative period. There were no mortalities in this group.

This diet improves nutrition, produces weight gain and a positive nitrogen balance, and favors tissue repair and the healing of peptic ulcers.

Peptic ulcers presenting surgical indications will continue to require surgical intervention. Their management will be more satisfactory with this plan of preoperative preparation.

The close coöperation of internist, surgeon and radiologist has been found mutually advantageous in the management of peptic ulcers.

## DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

### CARIES INHIBITION PRODUCED BY FLUORIDE APPLICATIONS

PREVIOUS STUDIES have shown that periodic topical applications of sodium fluoride will reduce the incidence of dental caries. These reports indicate that this caries-inhibiting effect will continue throughout a 2-year period of treatment. McCauley and Dale report an increase in caries in 21 children, aged 2 to 13, within the year following the suspension of a 1-year course of fluoride application.

Of the 100 original patients given fluoride treatments in the Brockton schools<sup>1</sup> between January, 1941, and June, 1943, 39 returned for the fourth and final examination in June, 1946. These patients had received a series of six applications with a 0.1 per cent sodium fluoride solution in one

quadrant of their mouths at intervals of four months during the two years of the original study. At the time of the fourth examinations the patients were between 16 and 18 years of age and had received no fluoride applications or special attention of any sort for a period of at least three years.

A group of 39 patients in which one quadrant of teeth had been treated six times during a two-year period with a 0.1 per cent sodium fluoride solution were reexamined three years after the cessation of such treatments. The treated quadrant still showed 36 per cent less new decay than the untreated quadrants. During the period of suspended treatment the occurrence of new decay was 30 per cent less in the quadrants which had been treated three years previously.

On the basis of these investigators' findings it seems to them justifiable to question the conclusion that suspension of fluoride treatment gives rise to a greater susceptibility to caries.

Another study,<sup>2</sup> report of which is made in the same issue of the same journal, bears on the same issue, and provides evidence that:

By topically applying sodium fluoride the incidence of tooth decay was reduced for at least three years following one course of treatments. This would indicate that the fluorine is quickly taken up by the tooth surfaces once and retained tenaciously by the enamel.

There appears to be no constant relationship. Solution of sodium fluoride is a satisfactory agent to be used to reduce enamel solubility. Other agents are just as good or even better. A solution of stannous fluoride in this experiment has proved the most worthwhile agent to reduce solubility of powdered enamel.

between the amount of fluorine contained in any of the reagents and their ability to reduce enamel solubility. Sodium fluoride, for instance, contains the greatest amount of fluorine incorporated in the molecule, but stannous fluoride with half the amount of incorporated fluorine, is more than twice as effective in reducing enamel solubility. It must be concluded, therefore, that there are other factors to be considered beside the fluorine content of these compounds.

1. B. G. Bibby and S. S. Turesky, Boston, in *Jl. Dental Research*, April.

2. J. C. Muhler & G. Van Huysen, Indianapolis, in *Jl. Dental Research*, April.

### A NEW TREATMENT OF OSTEO-ARTHRITIS

(G. Laughton-Scott, London, England, in *Clinical Med.*, Mar.)

My standard injection is 0.2 c.c. or less of 10% benzyl salicylate in olive oil. This extremely minute quantity rarely produces observable reaction, and if it does, the dosage must be reduced; indeed successful treatment depends on the dosage being so low that the patient is hardly conscious that his joint has been injected.

As to risk of sepsis, nearly 7,000 joints have been injected without its occurrence.

The shoulder joint is attacked by marking a spot  $\frac{1}{2}$  inch

outside and below the tip of the coracoid process, and thrusting the needle inwards and upwards with the humerus externally rotated. The sacro-iliac joint, being inaccessible to the needle, is reached by injecting deeply into the muscles which overlie it. The knee can best be injected at the outer side of the ligamentum patellae with the leg flexed to a right angle. Since 1/10 c.c. is the maximal injection a tuberculin syringe is useful.

My own publication is of 46 consecutive severe cases, all gravely disabled and their history up to the present known; 38 were returned as good and three as failures. In one case after seven treatments the heat and swelling disappeared and function was much improved. Three years later there had been no recurrence and the patient was still actively working.

In another, the knee being the affected joint, after 14 treatments, patient walked five miles without pain and has been well for 18 months. Four years later she was perfectly well.

In still another of the knees, 11 injections were given to ascertain whether changes seen by x-rays could be modified, but no change was noted. Interest lies in the fact of recovery of function after almost maximal disorganization. In February, 1945, the patient reported that recovery was maintained.

The ageing joint cannot recover its youth; nor can x-ray appearances be altered; but it is possible in most cases to restore painless function where pain and disability are not removable by any method in common use. It should be noted that these remarks have no application to the rheumatoid (osteo-porotic) joint in which treatment of this kind has a harmful effect; nor to osteo-arthritis of the hip, which seems to be a purely degenerative phenomenon.

## PEDIATRICS

### OBSTRUCTIVE LARYNGITIS IN CHILDREN CAUSE BY HEMOPHILUS INFLUENZAE BACILLUS, TYPE B

THE CLINICAL FEATURES of laryngitis caused by *H. influenzae*, type-b, in children are typical. The onset is abrupt. The child becomes fretful, and if old enough, complains of a sore throat and difficulty in swallowing. There develop in rapid progression, respiratory distress with inspiratory retraction of the sternum and soft tissues, cyanosis, hoarseness and a croupy cough. Prostration is entirely out of proportion to the short duration of the illness. The children are frequently limp and in shock as evidenced by their gray pallor. These children sometimes are moribund within eight to 12 hours after the onset of symptoms, particularly those under two years of age. The *t.* range is from 100 to 104°.

Thus does Davis<sup>1</sup> impress on us the need for being on the alert to make the proper diagnosis—early, and to give the proper treatment—early.

Then he goes on to tell us how to diagnose and treat:

The oropharynx usually is red and edematous, epiglottitis and glottis swollen and fiery red, exudate

1. H. V. Davis, Kansas City, Kansas, in *Jl. Kansas Med. Soc.*, Mar.

may or may not form. These infections have been confused most with hemolytic streptococcal infections of the throat.

There is a leukocytosis of 15,000 or more—pmns. 80 or 90%. The diagnosis can be confirmed by recovering the *H. influenzae*, type-b, in cultures taken from nasopharynx, oropharynx, larynx or blood.

Treatment.—Administration of sulfadiazine; and type-b, *H. influenzae* rabbit antiserum; and the administration of parenteral fluids to combat or prevent shock. All the patients in Sinclair's series who did not receive a sulfa drug died. The sulfa drug of choice is sulfadiazine.

There should be no hesitancy in performing a tracheotomy in those children showing respiratory obstruction due to laryngeal edema, cyanosis and toxicity. It is best to err on the safe side and perform a tracheotomy before the patient becomes moribund.

If vigorous and prompt therapy is instituted early in the course of the disease recovery occurs rapidly within the next few hours.

Probably the vast majority of *H. influenzae* infections in infants and children is caused by the *H. influenzae*, type-b. The most frequent infection caused by this organism is meningitis; the next most common laryngitis. Occasionally there occurs such infection of the pericardium, endocardium and joints following the respiratory-tract infection. Children over two years are more likely to have influenza-b, laryngitis, whereas the meningitis is more frequent under two years.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### THE OVERWEIGHT OBSTETRIC PATIENT WITH SPECIAL REFERENCE TO THE USE OF DEXEDRINE SULFATE

AN OKLAHOMA DOCTOR<sup>1</sup> reports a gratifying experience with a modern drug in the management of a very old complaint.

The normal patient should gain 15 to 20 pounds during pregnancy; the diet of the patient gaining more should be restricted. The patient who is obese when she becomes pregnant should be put on a restricted diet and her weight at delivery should be no more or perhaps less than when pregnancy began.

The mere instruction of the patient to restrict her diet to 1,000 calories per day is far from the answer to weight control. Obesity cannot occur without ingestion of too much food.

The only way this situation may be corrected is 1) by explaining to the patient the necessity of

1. J. W. Finch, Hohart, in *Okl. Med. Jl.*, April.

reducing weight and 2) by helping her to control her appetite.

The mechanism of action of d-amphetamine (Dexedrine) has been shown to be by: 1) stimulation of motor activity, encouraging the patient to take more exercise, do more work, etc., 2) depression of hunger motility and slowing of stomach emptying, 3) stimulation of hypothalamus affecting appetite and increasing fat metabolism, and 4) improvement of the mood, very useful in the patient who eats from boredom.

Patients were first given a list of foods which were not to be eaten, a list of those which were to be eaten sparingly, and a list from which food could be chosen freely. They were advised as to the calorie content so that they could fairly closely adhere to 1,000 to 1,200 calories daily. The use of bulky, low-calorie food was stressed.

The diet prescribed to embrace: one gram of protein for each pound of ideal weight, a multi-vitamin capsule of adequate dosage for a well-balanced diet; constipated patients, psyllium seed in some form before eating once or twice daily, to exclude from the diet those substances which whet the appetite, especially alcoholic beverages and condiments, and carbonated beverages because of their sugar content.

Two and one-half to five mg. of dexedrine sulfate was given one hour before each meal; if not sufficient to curb the appetite, to double the dose in a week. The weight was checked weekly, and if the control was not satisfactory, the dexedrine was increased to a maximum of 15 mg. t. i. d. The average was 30 mg., given 10 mg. one hour before each meal.

Half the patients complained of mild nervousness, palpitation, and insomnia; all were relieved with  $\frac{1}{4}$  to  $\frac{1}{2}$  grain phenobarbital given with each dose of dexedrine. Patients refractory to weight loss and all patients in the last month of pregnancy were required to restrict their fluid intake and eat a salt-free diet. They were given 45 grains of ammonium chloride daily in enteric-coated tablets, if satisfactory dehydration was not obtained by salt and fluid restriction.

All patients had a complete examination, including blood study, at the onset of pregnancy, and those with a dry skin, slow pulse, splitting nails, etc., had their b. m. r. determined. The original readings ranged from minus 26 to plus 14, with an average of minus three. Thyroid extract was used as an adjunctive measure in the cases of lowered b. m. r.

Average on same patients when taking from 15 to 45 mg. dexedrine daily was plus four. B. p. each visit, no effect of the drug was noted, except in six cases who had a hypertension with a marked obesity in early pregnancy. In each of these six

the b. p. was reduced to normal and the weight fell and remained normal throughout pregnancy and after delivery.

Dexedrine sulfate should not be given to patients hypersensitive to ephedrine-like compounds, or those manifesting anxiety or hyper-excitability, or in agitated prepsychotic states.

Finch has used this drug on over 400 patients, and never found anyone who refused to discontinue the drug. As regards unstable individuals, dexedrine would seem to be hardly more dangerous in their cases than caffeine.

When the drug is withdrawn gradually over a two or three weeks' period, no inconvenience is experienced.

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## SURGERY

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### COLLES FRACTURE

FEW of us there be who have done general practice who do not recall a case of Colles fracture in which the result was less than satisfactory.

Pickard<sup>1</sup> has somewhat to say, very much to the point.

In the first 72 hours circulation to the hand may be embarrassed; the dressing obstructing the blood flow. Every patient must be surveyed personally by the surgeon in the 12-24 hour period. Immediate initiation of active motion of all of the fingers, of as much flexion and extension of the elbow as the splint allows, and of all motions of the shoulder is essential.

Union of the fragments in this fracture requires five weeks. Deformity recurs frequently despite accurate reduction and satisfactory splinting, especially in those fractures in which there has been considerable comminution and loss of the bony substance of the dorsal portion of the distal end of the radius. This paper pleads for the accurate fitting of the dorsal splint and for the retention of that splint until union occurs. There is no evidence that early removal of splints for the purpose of physiotherapy produces a better functional result and there are many instances of recurrence of deformity in the second and third week under such a regimen.

In cases occurring in the aged or in which extremes of flexion and adduction have been used in the original splinting, it may be advisable to alter the position of the wrist and hand in the fourth week, bringing it back to a virtually neutral position. Upon removal of the splints, heat and massage applied to the hand will complement the active exercise of the fingers which at no time has been discontinued.

1. N. Pickard, Kansas City, Mo., in *Jl. Mo. State Med. Assn.*, Apr.

The housewife should return to her duties within 12 days. The period of partial disability of the heavy laborer may be four months.

Every practitioner should acquire the "feel" of a fracture in a superficial location without the necessity of eliciting crepitus. When injury occurs to the carpal navicular or to the semilunar bone, the penalty of overlooking such injury may be incalculable. The point of maximum tenderness to palpation must be established. If there is any question of tenderness located in the anatomic snuff box of the carpus, an oblique radiograph of the navicular must be ordered.

The most disastrous and most common complication is the stiff hand, a common result of splinting applied too tightly over too much of the hand or for too long a period. If, after the outpouring of fibrin incidental to the injury, the tendons are not exercised, there is a clotting of the synovia about tendons and joints which in many instances leads to permanent thickening, contraction and restriction of excursion. The abnormal motion chain of events may be broken only by early active motion of the unimpeded fingers.

The essential features of treatment are early accurate reduction, adequate splinting, immediate mobilization of the adjacent joints and prompt return of the individual to his normal activities.

#### IMPENDING DEATH UNDER ANESTHESIA

THERE follows a synopsis of the advice of Bailey<sup>1</sup> as to means of preventing anesthesia disasters.

The anesthetist reports that he cannot feel the pulse. Is the heart beating? When the surgeon has access to a large artery he can confirm or deny that the heart has ceased to beat; or if it is the anesthetist who must settle this point, the carotid pulse is the most reliable indicator. Three-quarters of a minute is available for obtaining this information. During this period the anesthetist verifies that the patient's airway is not obstructed. Then he breaks a capsule of amyl nitrite under the patient's nostrils to distinguish between cardiac depression and cardiac arrest. The surgeon and the surgical nurse are sterilizing the precordial and epigastric areas, and arranging towels.

To pierce the auricle a needle is thrust into the third right interspace at the upper rim of the fourth rib, close to the sternal border and directed upwards. Unless response is obvious and immediate, cardiac massage must be undertaken forthwith.

Artificial respiration is futile if the heart is not beating, but continuing automatic respiration (with an anesthetic machine if available) is highly desirable; for should the heart's action be reestablished, not a second is to be lost in oxygenating

1. Hamilton Bailey, London (Eng.), in *Jl. Int. Col. Surgs.*, Jan.-Feb.

the stagnant blood in the lungs.

In cases where the heart's action has ceased following blue asphyxia, the time limit for successful cardiac massage is greatly lengthened. The cerebral mechanism is not deprived of blood; indeed, it is congested, and because of this, the cerebral cells survive longer than if there were no congestion.

A case is reported of successful cardiac massage after a period of cardiac arrest of 12 minutes.

In cases of sudden collapse the pulse is almost imperceptible. To be of value, a pint or more of fluid must be put in the circulation in the matter of minutes. Injection of fluid by means of a syringe or syringes into the bone-marrow is the method that has yet to be bettered. By means of a sternal-puncture trocar and cannula the bone-marrow can be entered and the flow of injection fluid established more rapidly than by vein.

A very difficult operation had just been concluded—the removal of a fibroneuromyxoma the size of a tennis ball from the posterior cord of the brachial plexus. The pulse was imperceptible, it was found that saline solution would not run into either saphenous vein. The manubrium sterni was cannulized and 20 ounces of plasma was injected in less than two minutes. After the patient, who appeared moribund, had received a pint of plasma, the pulse was perceptible. It was not until she had received two pints of plasma via the bone-marrow that the cannula tied into the saphenous vein began to function adequately. By this time the patient was out of immediate danger.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### TREATMENT OF TETANUS

MOST IMPORTANT for the diagnosis of lockjaw is that we think of it. Graham and Scott<sup>1</sup> describe 10 cases among German prisoners with compound fractures, penetrating flesh wounds, or severe burns. Essentials of treatment are large doses of antitoxin, thorough debridement of infected areas, and constant individual attention. Passive immunity lasts only seven to 14 days.

The German prisoners had not been given routine prophylaxis. The first three received 70,000 to 80,000 units of antitoxin; all died within four days. The others were given 120,000 to 180,000 units as soon as possible after diagnosis—in most cases 20,000 to 40,000 units intravenously and the rest intramuscularly; in some instances additional doses in the ensuing week. All but one of the last seven survived.

Tetanus should be suspected when difficulty in

1. J. R. Graham & T. McN. Scott, in *New England Jl. Med.*, 235:846-862, 1946.

eating or muscle spasm about a wound begins five to 22 days after injury. Local cramps and rigidity may spread slowly or rapidly over adjacent areas and finally over the entire body; fever, profuse perspiration, and apprehension are usual. Diagnosis is based on symptoms, since organisms are seldom identified in the early stage.

After a skin test for sensitivity to horse serum, pentothal sodium anesthesia is induced, antitoxin is injected, and all wounds are thoroughly debrided with special attention to burns and small deep lacerations. Amputation may be necessary. Penicillin compresses and, in some cases, activated zinc peroxide dressings were applied.

Caloric, protein, electrolyte, and fluid requirements are large because of high fever, constant muscle spasm, sweating, and loss of blood and plasma. Both nutrients and medication are given through a stomach tube, introduced after a sedative and left in place for five or six days. The daily diet of 3,000 to 3,500 calories contains up to 130 gm. of protein and 4,000 c.c. of fluid. Plasma and whole blood are given as needed.

Sedatives should produce drowsiness without deep narcosis. From four to six c.c. of paraldehyde may be given q. 3 h. by mouth or tube, and two to four c.c. intravenously or intramuscularly when a rapid effect is desired. Sodium amylal is also effective; the basal dose is 0.2 gm. by mouth q. 3 h., the emergency dose 0.3 gm. by vein.

Both sulfadiazone and penicillin are useful, especially in preventing pulmonary infection. Atelectasis is usually a feature; for the first two or three days position is changed frequently, voluntary coughing is encouraged, and a mixture of 5% carbon dioxide and 95% oxygen is inhaled intermittently. All procedures that disturb rest are performed at three-hour intervals.

A tracheotomy set is kept in readiness. Catheters are used when bladder sphincters are spastic. Administration of 30 c.c. of mineral oil every night prevents fecal impaction.

#### SCABIES AMONG THE WELL-WASHED

(Sidney Friedenber, Camden, N. J., in *Jl. Med. Soc. N. J.*, March)

The smug assumption that scabies is a disease limited to the great unwashed needs to be revised. The perspiring skin is a perfect invitation to the ubiquitous parasite. I have seen two cases in U. S. O. hostesses whose only contact with soldiers has been through dancing.

Always suspicious is a severe nocturnal itching. A red-den papule on the penis may be the only diagnostic sign. Secondary infection and impetigo are common only in the child. Impetigo of a child's buttocks is scabies until proved otherwise. Obscure cases may be clarified by a search with a hand lens: finding of a zigzag burrow between two adjoining vesicles clinches the diagnosis and obviates the necessity of tests to determine the cause of a pruritus.

Secondary infection should be treated first. Boric acid solution soaks locally and sulfathiazole in full doses orally

are satisfactory if there is any evidence of toxicity or spreading infection. After 48 hours, 25% emulsion of benzyl benzoate, three applications within 24 hours, the treatment preceded and followed by a thorough bath. All clothing previously worn should be boiled or drycleaned, although no one has ever found the scabiei in clothing or blankets. Every "authority" incriminates them, however. Blankets may be aired in the sunlight.

Itching often persists after the parasite has been eradicated. A soothing lotion may follow, or if the skin is dry, an ointment—phenol, 0.40; menthol, 0.03; hydrophilic ointment (NJF), 60.0.

If success does not follow the first course it is not wise to try and try again. *Overtreatment dermatitis is the most frequent complication of scabies.* Wait at least 10 days and attempt to soothe both the skin and the patient.

If after apparent success a new crop of vesicles appears the lesions should first be painted with compound tincture of benzoin\*; second, each member of the family should be inspected for a possible source.

Urticaria, not so common in the young, is occasionally seen some six weeks after the onset. This is probably a sensitization phenomenon. Benadryl, 50 mgms., four times a day, is of aid.

\*It's a real pleasure to see mention of an old friend, albeit I doubt it if ever did anybody or anything and good.—Editor.

#### Q FEVER IN THE UNITED STATES

(N. H. Topping et al., in *Jl. A. M. A.*, Mar. 22nd)

During the month of March, 1946, there occurred in Amarillo, Texas, an explosive outbreak of an acute febrile illness which has since been identified as Q fever.

All the cases were among those persons engaged in the handling of livestock.

There were 55 cases and two deaths among 136 employees of three establishments, an attack rate of 40%.

The clinical data were obtained mainly from the 18 hospitalized patients; 37 patients were treated at home.

The onset was fairly sudden, usually not severe, with headache, chilly sensations, malaise, sometimes nausea or vomiting. Frequently there was a latent period of one to three days in which some patients continued to work.

Some complained of nuchal pain; rigors were experienced by five patients. Diarrhea was uncommon; drenching sweats and insomnia were frequent.

Several had a slight cough; half had substernal pain, more neuralgic than pleuritic. On admission the average p. rate was 94, t. 101.5. Fever of five- to 15-days' duration, normal w.b.c.; roentgenologic evidence of pulmonary lesions with minimal symptoms and physical signs referable to the respiratory tract, and rapid convalescence.

The cutaneous manifestations of other known rickettsial diseases were not observed.

The complement-fixation test for Q fever is both sensitive and specific; however, serums fixed complement only near the end of the acute phase of illness or in early convalescence. The use of killed antigen in serologic tests is preferable to attempts to recover and identify Rickettsia burneti because of the extreme infectiousness of the agent in the laboratory.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., Editor, Chester, S. C.

### THE AMBULATORY DIABETIC AND THE FAMILY DOCTOR

DIABETES we have always with us. The latest pronouncement by Joslin<sup>1</sup> lends itself admirably to abstraction of essentials.

1. E. P. Joslin, Boston, in *Cincinnati Jl. of Med.*, April.

Prior to 1941, 64 per cent of my fatal cases succumbed to diabetic coma, but now three per cent so succumb, leaving 63 per cent of the fatal cases to die in other ways; the mortality from cancer has risen from 1.5 to 8.9 per cent and arteriosclerosis from 17 to 67 per cent. Indeed just as all diabetics dying with cancer escape statistical enumeration, so likewise with a great portion dying from arteriosclerosis.

The accumulation of private statistics will furnish a far more accurate method of determining the number of diabetics in the country than the use of public mortality data.

Today a diabetic under 30 years of age coming to the office of a doctor just entering upon practice ought to live longer under that doctor's care than the doctor will remain in active medical work. When the doctor finds out that one has diabetes, he must urge that all members of the household be investigated. To accomplish this each doctor must have assistance which is not too expensive.

At the diabetic's first visit the doctor must take a careful physical examination. He must impress the patient with the gravity and yet the hopefulness inherent in the disease. The visit of a new diabetic often is the prelude to the visit of many other diabetics. No one should ever plan to be a diabetes specialist. Today more than ever problems of surgery, neurology, ophthalmology, obstetrics and gynecology have great practical bearing. Every diabetic deserves an x-ray at his first examination and all those under 35 years an annual x-ray, especially so if they have ever been exposed to tuberculosis or have gone through an attack of diabetic coma, because it is in this latter group that the tuberculosis harvest is highest. Since nearly nine per cent of our patients ultimately die of cancer, one searches the new diabetic with an eagle eye for that disease.

As for the diet, it can be taught in a few moments. A slice of bread at each meal represents 50 grams of carbohydrate and so does a medium-size orange. The third 50 grams—20 grams; from four portions of 5 per cent vegetables; a bowl of oatmeal gives another 20 grams, and a half-pint (half milk and half cream) 10 grams—a total of 50 grams. With the bread and the fruit 150 grams in all. It is easy to raise the c-h, if desirable to 175 or more grams. Protein is regulated by the age and weight of the patient and is that of the normal individual. An ounce of butter contains 25 grams and a half-pint of 20 per cent cream 50 grams. Each ounce or 30 grams of cooked meat averages 8 grams of protein and 5 of fat.

If the patient needs insulin, give at the first visit in small dose. If he has given up insulin bear in mind the possibility of allergic symptoms and proceed very cautiously. From middle life

onward the proportion whose diabetes can be controlled with zinc protamine insulin is high; the younger the patient the more necessary the addition of quick-acting crystalline insulin because of the additional food he must eat in the waking hours of the day in order to gain weight. Be slow to change from one to another.

Now and then there comes a patient with sugar in the urine not dextrose, but pentose—a perfectly harmless condition.

At the first visit if the urine is sugar-free, one can give 50 grams of glucose, take the blood sugar at the end of the hour; glycosuria and glycemia may be so high that the diagnosis can be made on the spot. With any borderline case, allow the patient to be on a free diet for several days, then use the 100-gram glucose tolerance test.

Return visits, at prescribed intervals, are to be rapidly lengthened. At each visit the doctor should tell the patient something new about diabetes.

The severe case, if treated aggressively, may turn out to be mild; the mild case neglected will almost certainly become severe.

With the same number of units, say 250, given in the first three hours after entrance in diabetic coma the mortality is only 10 per cent of what it previously was with comparable cases to whom the same amount of insulin was given in the first 12 hours.

## MENTAL HYGIENE FOR THE GENERAL PRACTITIONER

THE AIM of mental hygiene, as expressed by Ginsberg,<sup>1</sup> is to prevent the development of mental illness and delinquency through educational measures, and the earliest possible recognition and treatment of personality disorders before hospitalization or penalization become necessary. An infant has inherited his fundamental body make-up and certain latent psychic factors. His mentality is formless, what Freud terms the id. When this id is forced to learn the dangers of the environment and the fact that it cannot always have its way without pain or punishment, then part of this id becomes modified into the ego. Soon thereafter, through the influence of the parents and society, a knowledge is acquired of social conceptions of right and wrong; that is, a conscience. This Freud calls the super-ego. The personality structure thus is made up of an unconscious and a conscious element. The unconscious is a living, motivating system of mental processes, capable of independent existence, and not subject to the laws or logic or related reality. It contains all of our infantile impulses. There is a continual striving on the part of the repressed instinctive tendencies of the id to express themselves in spite of the prohibitions of the ego and super-ego.

1. S. T. Ginsberg, Marion, in *Il. Indiana State Med. Assn., Mar.*

The conscious mind, only a small part of the psyche, attempts to control voluntary activity, both psychic and muscular. It serves to test reality, to orient us, to attempt to make our behavior appropriate, on the basis of experiences consciously recalled.

Fear is the motive power behind all repression, by no means a rational or entirely conscious fear of danger, but an inner fear which appears as a guilty conscience. There is constant conflict between the impulses seeking expression and the repressions holding them down. One of the common ways to resolve its conflicts is sublimation, transference to something acceptable. A sexual drive unaccepted by society or the individual's ego is sublimated into an acceptable creative drive. Projection is to lodge the fault at someone's else's door; a common explanation of hallucinations and delusions. Interjection is to award ourselves the qualities of another, e.g., we identify ourselves with the hero of a movie. Rationalization is another common mental mechanism utilized by all of us frequently to explain away our faults without loyalty to the facts.

The formation of hysterical symptoms is the conversion of strong emotional feeling into a physical symptom, yet with no recognition of the relationship. Similarly, paralysis and loss of sensation, loss of speech and partial or complete loss of vision, amnesia, as well as many functional physical complaints, like low backaches, may be conversion symptoms.

Another common mechanism is displacement. A man takes a dislike to his new boss, not recognizing the fact that the new boss reminds him of father he always hated or feared.

Disappointments, adversities, difficult tasks, create a strain upon the compromises which ordinarily suffice to maintain balance in the personality structure. A person is aided in solving his problems by a normal amount of anxiety. Often psychic traumas of childhood, forgotten by the individual, may be re-enacted by a similar experience and precipitate maladjustment or mental illness. Physical illness may precipitate mental illness.

Inadequate parental love and too rigid schedules may produce anxieties and insecurities that may stay with the child for life. If the parents over-indulge the child he may grow up selfish, inconsiderate, demanding and bound to suffer rebuffs and disappointments.

The general practitioner can and should assume a major role in the coordination of all the various efforts by the different groups interested in mental hygiene.

The child is taught to take his place in groups, to learn tolerance and fair play, to acquire ideals of honesty, to learn to get along with others, thus

preparing him to be a happy individual, a decent and responsible citizen in a democratic society.

Adolescents should be given common-sense explanations about sexual functions. The general practitioner can help parents and teachers handle emotional excesses with patience and understanding; to overcome anxiety, to restore self-confidence and reorient his social goals. Punishment, when needed, should be just and direct. Plans for the child's education and career should be in keeping with the child's mental and physical capacity and the child's individuality, and in keeping with the economic means of the family.

The general practitioner can play an important role in marriage counselling. Both partners must sever themselves emotionally from their respective families, they must learn to understand each other, they must turn to each other for sharing and planning, and the cultivation of common interests and goals. Sex adjustment in marriage is important, but this has been over-emphasized. When a couple is adjusting poorly a child will usually add to the conflicts and stresses. The child, too, should be considered.

Recreation, exercise, entertainment in groups, all help to increase the zest for living, and help in overcoming anxieties, aggressive tendencies and fears. There can be a closer relationship between married couples of this age group, with mature interest, social and religious life and cultural pleasures.

Senescence, failures, loss of loved ones, felling discarded and unwanted, lead to mental illness. These individuals, with proper guidance and understanding, can learn to adjust their lives to their bodily and emotional limitations.

The general practitioner can help most patients overcome mild behavior problems and maladjustments, and diagnose mental illnesses which require the more intensive psychotherapy of the psychiatrist, and early the frank psychosis needing institutional treatment. He can assume a dominant role in this effort to improve the individual's physical and mental health, his adjustment in the group, and thus maintain a better and healthier society.

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RICKETTSIALPOX is a new disease of rickettsial origin. The clinical features observed in 144 cases are described. It is characterized by the appearance of an initial lesion about a week before the onset of fever, chills, sweats, headache and backache, and by the appearance of a maculopapular and papulovesicular rash, three to four days after the onset of the fever. Except for leukopenia, routine laboratory findings are generally negative. The usual bacterial agglutination tests are uniformly negative; but antibodies for rickettsialpox are demonstrable by means of the complement fixation test. There have been no deaths.—Morris Greenberg *et al*, Bethesda, in *J. A. M. A.*, March 29th.



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## SIMPLE, EASY WAYS OF MAKING THE USE OF OUR HIGHWAYS SAFE

IT IS ENCOURAGING to have the *Chapel Hill Weekly* come out for the requirement of governors on all automobiles using the public roads.

This journal has, over many years, to the limit of the strength of its voice, earnestly plead for the enactment of a law requiring this measure as its main feature, and a few others to help out.

Doctors have to be on the roads when most others can choose to stay in-doors.

All parents would be happier could they know that their children, out for an evening, could not be crashed into by some fool (most of us, according to Carlyle) allowed to operate a car on the highways to the limit of its possible speed—average more than a hundred miles.

I read this week a familiar tale of two thugs robbing a bank and "speeding away." If everyone could know that a car operated at a high speed were operated by either a lawless person or a law officer in pursuit of a law-breaker, the chance of escape would be small indeed. Under present circumstances, a person going by at an unlawful rate of speed may well be a minister, a doctor, or any other respectable citizen. Indeed, one Governor of our State has, in recent years, been stopped for such violation; and only a few weeks ago, a representative at Washington of a foreign government was arrested in North Carolina for driving at a dangerous and illegal speed and—shameful to relate—was liberated and allowed to proceed on his potentially murderous way. What has become of equality before the law?

The other measures this journal has urged over and over are:

Marking two lines, instead of one, to separate the two lanes of traffic, so that the driver going north can have a line to run *on*, and so can the driver going south; so that the driver going east can have a line to run *on*, and so can the driver going west.

Providing a good sand-clay path alongside each highway. When our roads were of mud after every rain those who loved to or had to get about on shank's mares had such walking paths. Their destruction in widening and hard-surfacing the roads is one of the many ills chargeable to the great god, Progress.

To these urgings I would now add one that every one seen at the wheel of an automobile moving on a public road or street, with only one hand on the wheel, unless the other hand is signaling needfully, be deprived of license to operate a car for 30 days, and, on second conviction, so deprived permanently, and the car confiscated to the State.

One of the greatest automobile drivers who ever lived said, toward the close of his life, that he never knew but two men who were competent to drive with one hand—Eddie Rickenbacker and Ralph de Palma—and that both of them had too much sense to undertake it.

Observe carefully and see if the proportion of drivers you meet having only one hand on the wheel be not as high as 25 per cent—among the limp Louies and languid Lenas, upwards of 50 per cent.

#### METHODS OF BRINGING AND HOLDING DOCTORS IN RURAL AREAS

THERE is no problem of medical care and no difficulty in getting and keeping medical personnel in the more populous areas, so our attention and efforts can be concentrated on the less thickly settled areas, where towns large enough to support a doctor are widely separated. Some better system of professional, educational, religious, social and economic relationship will have to be established to locate doctors in such rural communities, and to hold them after they have located there.

Thus a Rocky Mountain doctor<sup>1</sup> accurately states the problem, which he goes on to discuss with great understanding.

The only two groups who are sincerely interested in finding a solution to the rural health problem are the inhabitants of such rural areas themselves, and the medical profession.

More time, money and energy should be spent on good roads than in trying to get a hospital located in the community under the provisions of the Hill-Burton Act. Such a hospital should be located only after a practical interpretation of a thorough survey of hospital and health needs. The many ghost towns in the mining areas do not present pleasant pictures; but even more depressing sights would be ghost hospitals over the United States in the next few years, from building hospitals now where they can not be adequately used. If a town and its surrounding trade territory is large enough to support a doctor and wishes to have one, then every effort should be put forth by its citizens to obtain that desire. They may have to offer inducements such as the physical facilities which are so essential to a doctor if he is to properly care for the sick. In some cases it may be necessary to subsidize the doctor on a monthly basis in order to assure him an income commensurate with his education and ability. Such subsidies should be financed locally. After a doctor has located in a rural community, its citizens should show loyalty to him by using him in case of illness and not go to the larger but more distant towns for their medical care.

<sup>1</sup> F. A. Humphrey, Fort Collins, Colorado, in *Rocky Mtn. Med. J.*, April.

The medical profession is beginning to show signs of interest in the general practitioner and the rural health problem, as evidence by the formation of the new Section on General Practice in the American Medical Association. This activity has at least raised the spirits of the man doing general work and time will tell whether it has elevated his general standing and importance in medical practice in the minds of the public, so that he will be accorded something like equal honor with those called specialists.

Other medical schools should follow the example of Colorado University which has established a residency in general practice following the usual rotating internship of one year. In this residence the graduate will study six months each in medicine, in pediatrics, in obstetrics and gynecology and in surgery, with allied specialties included under the four main heads. After this training, it is expected that the doctor will be capable of caring for better than 90 per cent of the patients coming to him should he locate in one of the smaller towns.

Another change in policy which would relieve materially the present shortage of doctors in rural areas is the requirement of from three to five years in general practice before resident training for a specialty is begun. This would be of great benefit to the individual by broadening his clinical knowledge and by giving him a better understanding of the difficulties encountered in general practice, and better qualifying him to choose the specialty for which he has the greatest aptitude. Later should he wish to become certified credit should be given for the time spent in general practice.

Raising the general practitioner to the level of professional equality which he deserves in the estimation of both the medical profession and the general public will go a long way toward solving the problem of unequal distribution of available medical personnel. With the proper facilities of a modern doctor's office, manned by efficient technical personnel, few patients will need go farther for expert medical care. Under such a plan, the doctor would also act as health officer of the community and within his jurisdiction would fall all the sanitary problems and public-health measures of the region. He could assign vaccination and prophylactic inoculations to a nurse working directly under his supervision.

The few cases which cannot be properly treated through office or home care should be sent to the small general hospital for the region, usually located in one of the larger towns. A patient should always be referred by the local doctor. If the distance is not too great, the doctor should be a member of the hospital staff, and continue to care for his patient unless he prefers to refer him as a matter of convenience, or unless he believes some

other doctor to be better qualified to treat his ailment. Under no circumstances should he be forced to refer his patient because of a closed staff at the hospital which will not allow him to care for his own patients while they are in the hospital.

A thoughtful editor<sup>2</sup> asked last February who of us remember having seen "Physician and Surgeon" on the doctor's shingle? And he went on:

In a broad sense it is unfortunate that this designation is passing. But with present educational methods and the grand marathon with national boards of certification as the goal, young doctors are led to the false conclusion that there is not time for experience in general practice. Service in hospital wards is not comparable to practice in the homes of the people. No doctor can be adequate in both the art and science until he has encompassed society and studied the cross section from hovel to mansion.

We have widened the breach between the physician and the surgeon, and the gaping chasm has confused the public. The physician should see the patient as a composite whole—mind and body—and comprehend his needs. Having met this obligation with diagnostic skill, he will employ wise discrimination and sane therapy, including the aid of the specialist when conditions demand. The medical student who hurries through school, obtains his degree, and scrambles for certification in a specialty with no experience in general practice, may know disease conditions in his narrow field but he will never comprehend their full significance.

Still another<sup>3</sup> speaks out for the general practitioner:

We have just read an article in the *Wisconsin Medical Journal* under the title "Is Overspecialization a Threat?" Our answer is an unqualified "Yes."

We are profoundly depressed by what we read and hear of doctors rushing out of the Army into specialties. We acknowledge the necessity of specialists. We are one ourselves and we call on others all the time. But we insist that the crying need is for doctors. A doctor is a man who can deal with emergencies himself. A doctor is a man who looks at another man's wife's face and explains to an Industrial Court why that particular man never got over his backache. A doctor is just as well acquainted with the ordinary burdens of life as any of his patients are. A doctor is a whole man, if any whole man still exists, who can look at his patient as a whole man and make a fair estimate of his condition.

He talks to him, examines him, "sizes him up," as we used to say. If the man's eyes, kidneys,

heart, spine, or whatever it may be is obviously the presenting abnormality and so abnormal as to be beyond his skill, he will send the patient to a specialist *with a full history of the patient*. Under such circumstances the chances are that the patient will get good treatment at small cost and, what is most important, will not, after making the rounds of specialist after specialist return to his home penniless and distracted, convinced that he is a collection of disassociated parts, none of which is functioning very well and which he is quite sure will never again become harmoniously associated.

The general practitioner is not a man who has spent his life in the cloistered pedagogy of full-time medicine, where the professors have nothing to do but hand down their wisdom to their inferiors.

We are 100 per cent behind the general practitioner who, second, knows what he knows, and first knows what he doesn't know.

The editor of this journal is credited by some, blamed by others, for being responsible for the creation, ten years ago, of the first Section on General Practice in any State Medical Society. Certainly it was on his presentation of the subject to the Southern Medical Association that such a Section was established by that Association. He participated in the first meeting of a Section on General Practice of the American Medical Association.

The baptismal name of the family doctors' part of our State society is the Section on General Practice of Medicine and Surgery.

The Medical School of the University of Colorado has set an example which all schools would do well to emulate. Also, every medical school should teach refraction and the fitting of glasses, so enabling general practitioners to render their patients competent service in this line, and not have to see these patients go to those who are not doctors of medicine, and pay them fees far higher than those the general practitioner receives for his ministrations.

We have more and over made the point that belittling the G. P. is a large factor in causing him to specialize and that the resultant shortage of G. Ps. outside the cities is the cause of the ills that beset us. We are glad to learn that some others have arrived at the same opinion.

#### DR. JACK DA COSTA TOWARD THE CLOSE OF HIS LIFE

As I drift down the river and look backward toward the spring of life, and think of the cheerful alacrity with which the crystal water flowed, I cry out:

"Give me the old enthusiasms back;

Give me the ardent longings that I lack,

The glorious dreams that fooled me in my youth;

The sweet mirage that lured me on its track;

And take away the bitter, barren truth."

2. Of the *Journal of the Oklahoma Medical Assn.*, Feb.

3. *New York State Journal of Medicine*, March 1st.

# NEWS

## UNIVERSITY OF VIRGINIA

At the annual meeting of the Mid-Atlantic Section of the American Urological Association held in Washington on March 20th, Doctor Samuel A. Vest, Professor of Urology, spoke on Anuria and Tubular Lesions in the Kidney.

Doctor D. C. Smith, Professor of Dermatology and Syphilology, spoke on the Early Treatment of Syphilis before the Tennessee State Medical Association on April 8th.

On April 9th Doctor Fletcher D. Woodward, Professor of Otolaryngology, spoke before the Tennessee State Medical Association on Paralysis of the Larynx. He also addressed the Tennessee Academy of Ophthalmology and Otolaryngology on April 8th on the Treatment of Sinus Disease.

At the sixtieth session of the American Association of Anatomists held in Montreal on April 3rd, Doctor Carl C. Speidel, Professor of Anatomy, spoke on Reinnervation Phenomena as Revealed by Prolonged Observations of Vagus-nerve Stumps and Associated Sense Organs.

## DUKE UNIVERSITY SCHOOL OF MEDICINE

Dr. W. Henry Hollinshead, Professor of Anatomy, has accepted the appointment of Professor of Anatomy, Mayo Foundation and Graduate School of Medicine, University of Minnesota, Rochester, Minn. In this position he will organize and head a Department of Anatomy which is being established by the Mayo Clinic and will continue his research upon the peripheral nervous system and mechanisms in the reflex control of respiration and blood pressure.

Dr. Hollinshead is one of the original staff of the Duke University School of Medicine, having been a member of the Department of Anatomy since 1930. He will assume his new duties July 1st.

The Department of Medicine has recently added to its staff the following members:

Dr. John Hickam, graduate of Harvard Medical School in 1940, house officer, Peter Bent Brigham Hospital, 1940-1942; resident in Medicine, Grady Hospital (Emory), 1942-1943; Medical Corps, A. U. S., 1943-1946; and Research Fellow, American College of Physicians (Emory), 1946-1947.

Dr. Frank L. Engel, graduate of Johns Hopkins in 1938, house officer, Mount Sinai Hospital, New York, 1938; National Research Council Fellow in Physiological Chemistry, Yale, 1941-1943; Research Assistant in Physiological Chemistry, Yale, 1943-1945; Associate in Medicine, Emory, 1945-1947.

Dr. J. P. Myers, graduate of Stanford Medical School in 1937, house officer in medicine, Stanford University Hospitals, 1936-1938; Research Fellow, Harvard, 1938-1939; assistant resident and resident, Peter Bent Brigham Hospital, 1939-1942; Chief of General Medicine Section, Eighth General Hospital (Harvard Unit), U. S. Army, 1942-1944, and of 163rd General Hospital, 1944-1945; Associate in Medicine, Emory, 1946-1947.

## McGAVRAN SUCCEEDS ROSENAU

Dr. Edward G. McGavran, Professor of Public Health and Preventive Medicine and head of the Department of Public Health of the University of Kansas School of Medicine, has been appointed Dean of the University of North Carolina School of Public Health to succeed the late Dr. Milton J. Rosenau and Acting Dean Herman G. Baity.

A native of Pachmaria, Central Provinces, India, Dr. McGavran came to the United States in 1910. He received

his M.D. from Harvard in 1928, and his M.P.H. from the Harvard School of Public Health in 1935. He served his medical internship at Rochester General Hospital.

From 1926 to 1928 Dr. McGavran was a teaching fellow in the Department of Parasitology, Harvard Medical School, and for several months in 1927 he was in Egypt and India doing medical research for the Rockefeller Foundation.

He practiced medicine at Sidel, Ill., from 1929 to 1934, and for the next five years served as director of health and county health officer in Hillsdale, Mich., for the W. K. Kellogg Foundation.

From 1941-46 he was health commissioner of St. Louis County, Mo., and also taught the last three years with the rank of associate professor in Washington University Medical School.

## RESOLUTIONS OF APPRECIATION OF DR. ENNETT

Be it resolved that the Pitt County Medical and Dental Society hereby gives the following expressions of appreciation of the services of Dr. N. Thomas Ennett to Pitt County, and of regrets that he has deemed it to his best interest to resign from the services of the county.

The members of the Society unanimously commend Dr. Ennett for his untiring service in behalf of the public health of Pitt County. They always found in him a leader in any movement looking toward the betterment of public health, always cooperative and sympathetic with the members of the medical and dental professions and, indeed, a man who could well coordinate the public and private practice of medicine.

Under Dr. Ennett the Health Department made notable records in the fields of venereal disease control, sanitation, maternal welfare; and in tuberculosis, typhoid fever, and diphtheria control. His leadership in the Tuberculosis Seal Sale resulted in great increases in contributions, and his wise use of these funds essentially for case finding has done much toward decreasing the spread of this disease in Pitt County.

During his tenure as Pitt County Health Officer, Dr. Ennett was honored with the presidency of the Pitt County Medical and Dental Society and the presidency of the North Carolina Public Health Association.

After twelve years of association with a man of such culture, honesty, friendliness, faithfulness to duty, and professional ability as Dr. N. Thomas Ennett, it would be impossible to view his leaving without a deep sense of personal loss and a feeling that Pitt County has lost both a valued citizen and servant. It is the wish of the entire membership of the Society that in his new work Dr. Ennett may find great satisfaction and happiness.

(Signed) F. P. Brooks, M.D.

J. M. Mewborn, M.D.

C. F. Irons, M.D.

THE NALLE CLINIC, Charlotte, N. C., announces the addition of a Department of Otolaryngology under the direction of John S. Gordon, B.S., M.D., Diplomate of the American Board and recently Instructor in Surgery in the School of Medicine, University of Chicago.

DR. THOMAS BROCKMAN, of Greenville, S. C., recently spoke on "Socialized Medicine vs. Blue Cross Plan" to the honorary premedical and scientific groups at Furman University.

DR. C. L. GUYTON, who, since his return from war service has been Director of Cancer Control of the South Carolina State Board of Health, has resigned to take the office of Health Officer of Greenville, S. C.

DR. EDGAR A. HINES, JR., Associate Professor of Medicine, University of Minnesota (Mayo Foundation), was guest speaker for the May meeting of the Columbia (S. C.) Medical Society. Dr. Hines is well remembered as the son of the long-time Secretary of the South Carolina Medical Association, Dr. Edgar A. Hines, of Seneca.

Regular meeting of the CATAWBA VALLEY MEDICAL SOCIETY, April 16th, at 6:30 p. m. at the Community Building, Morganton, N. C. Program:

"Traumatic Diaphragmatic Hernia" (with case report), by Dr. A. M. Lang; "Some Diseases of the Eye," by Dr. G. M. Billings; "Liver Function Tests," by Dr. John Reece.

DR. JAMES B. GREENWOOD announces the opening of offices in the Medical Building, Charlotte, North Carolina, for the practice of General Medicine. Dr. Greenwood is a native of Philadelphia; since 1931 his home has been Charlotte. His pre-medical work and first two years of medicine were taken at the University of North Carolina, last two at the University of Pennsylvania. He served an internship at the U. S. Naval Hospital in Philadelphia, and had a year of sea duty with the Navy. Since his service with the colors, he has been Chief Resident at Mercy Hospital, Charlotte.

#### WITH OUR ADVERTISERS

##### *Summer Diarrhea in Babies*

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating most types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 4 packed, level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually left out. One to three packed level teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. For further information, write to Mead Johnson & Company, Evansville 21, Indiana.

##### *U. S. Vitamin Corporation*

Rutin, a nontoxic drug derived from buckwheat, has shown great possibilities in the treatment of capillary fragility and hemorrhage. Clinical investigations of hypertension, diabetic retinitis, and hemorrhagic telangiectasia have demonstrated the ability of Rutin to favorably increase capillary resistance, and to prevent or minimize hemorrhagic tendencies and vascular crises. Others employed Rutin successfully in overcoming increased capillary fragility in a majority of hypertension patients, achieved good prophylactic results against bleeding among high blood pressure patients receiving thiocyanate therapy. In highly resistant hemorrhagic telangiectasia, Rutin arrested bleeding within 24 hours after several transfusions had failed.

In a leading editorial the *American Journal of Surgery* says of Rutin: "Since the material seems to produce no toxic results in man and is furnished by practically tasteless pellets which can be taken simply by mouth, a thorough appraisal in clinical conditions in which capillary fragility is altered seems worth while. As far as hypertension is concerned, those seriously ill patients who have marked changes in the smaller vessels, especially in the eye grounds, with hemorrhage and edema certainly deserve the benefit of a trial with a harmless agent of this sort in the face of a prognosis which is absolutely bad."

The profession is invited to send for literature—U. S. Vitamin Corp., 250 East 43rd Street, New York 17, N. Y.

#### MARRIED

Dr. Cary Grayson Suter, of Fort Defiance, Virginia, and Miss Anne Deane Carr, of Richmond, were married on May 3rd.

#### DIED

Dr. William Thomas Griggs, 81, beloved physician and progressive citizens of Currituck County, N. C., died April 10th at his home at Poplar Branch, after several months of declining health.

Dr. Griggs, who more than a year ago had given up active medical practice, was a native and life-long resident of Currituck County. No other citizen in the entire county was so beloved and few can compare in attainment of great things for the betterment of the county and its citizens, says a report on his death. As a teacher in and superintendent of Currituck County schools he worked for better educational opportunities, the fruition of his work being the establishment of the Dr. W. T. Griggs High School, erected in 1940 and dedicated as a memorial to his efforts.

Dr. Griggs began his medical career in the county in 1896 after he received his degree from the University of Virginia School of Medicine, and till a year ago he ministered to his people's health and other needs in a way that attracted attention far and wide.

Dr. Henry Rolfe DuPuy, 40, died May 3d at his home at Winchester, Va. The body was taken to Washington for cremation.

Dr. DuPuy was born in 1906, in Norfolk, and graduated from the Medical School of the University of Virginia in 1932. The first few years of his professional life were spent in Public Health work. Later he practiced general medicine at Martinsburg, W. Va., and finally at Winchester.

#### METOPON HYDROCHLORIDE

(Methyldihydromorphine hydrochloride)

IN 1929, with the funds provided by the Rockefeller Foundation, the National Research Council, through its Committee on Drug Addiction, undertook a search for an agent comparable to morphine in analgesic powers, but non-addicting. The principal participants were the Universities of Virginia and Michigan, the U. S. P. H. S., the Treasury Department's Bureau of Narcotics, and the Health Department of Massachusetts. Metopon is one of the many compounds made and studied in this coordinated effort.

Metopon is a morphine derivative, qualitatively like morphine even to the properties of tolerance and addiction liability. It differs chemically from morphine in that: one double bond of the phenanthrene nucleus has been reduced by hydrogenation; the alcoholic hydroxyl has been replaced by oxygen; and a new substituent—a methyl group—has been attached to the phenanthrene nucleus. Pharmacologically Metopon differs from morphine quantitatively in that: its analgesic effectiveness is double, while its duration of action is the same; it is nearly devoid of emetic action; tolerance and physical dependence develops more slowly and disappears more quickly; therapeutic doses produce little or no respiratory depression and much less mental dullness; and it is highly effective by oral administration.

In the late stages of cancer, administered orally, it gives adequate pain relief, with little mental dulling, without nausea or vomiting and with slow development of tolerance and dependence. It is for that purpose exclusively that it is being manufactured and marketed.

Metopon will be available only in capsules (3.0 mgm. of the hydrochloride) in bottles of 100. They can be obtained by physicians only from Sharp & Dohme or Parke, Davis

& Co., on a regular official Narcotic Order Form, which must be accompanied by a signed statement of the number of patients to be treated and the diagnosis in each.

The dose, 2 or 3 capsules, to be repeated only on recurrence of pain.

Tolerance to Metopon develops slowly. It can be delayed or interrupted entirely by withholding occasionally for 12 hours or for as long as the incidence of pain will permit.

Each physician will be sent a record card for each patient to whom Metopon is to be administered, these cards to be filled out and returned in the addressed return envelope, as a requirement for filling repeat orders of the drug. The principal object of this detailed report is to check the satisfactoriness of Metopon administration in general practice. The physician's cooperation in making it as complete as possible is earnestly solicited.

Queries and comments on Metopon may be directed to Dr. Nathan B. Eddy, National Institute of Health, Washington, who will answer them for the Committee.

**RADIOACTIVE IODINE.**—Due to the small number of cases treated one could not on a statistical basis come to any conclusion as to the adequacy of this type of therapy as compared with the results obtained from external irradiation, thiouracil and surgery. The results obtained are encouraging, however, and the use of radioactive iodine therapy in the treatment of thyrotoxicosis should be carried on. It apparently has a promising future as one of the key weapons in the treatment of this disease.—A. M. Alderman, in *Jl. Bowman Gray School of Med.*, Jan.

Smith: My wife's been very ill and the doctor told me I should take her to the seashore, but I didn't have the money to do that.

Jones: What are you going to do about it?

Smith: Oh, I've found a way to bring the sea breezes to her.

Jones: How?

Smith: I fan her with a herring.

Usher at Wedding: Are you a friend of the groom?

Lady: Indeed no, I'm the bride's mother.

"Why do you keep looking down all the time?" asked the nurse of a patient.

"The doctor told me to watch my stomach."

"My sweetheart lost all his money."

"I'll bet you're sorry for him."

"Yes, he'll miss me."

We are advised that we may look forward to more corn. Which variety: On-the-cob, moonshine, or radio?

Night clerk (picking up receiver for fiftieth time within an hour): Well, what's bitin' you?

Outraged guest: That's exactly what I'd like to know!

"What does your husband give you for spending money?"

"Last week he gave me a black eye."

Jones: I like that country—it's very healthy. All the time I was out there I never paid a doctor bill.

Wilson: I know that; I met the doctor and he told me.

## BOOKS

**CLINICAL ALLERGY:** For General Practitioners and Students of Allergy, by ALEXANDER STERLING, M.D., Diplomate in Internal Medicine; Fellow of the American Academy of Allergy; Assisted by BEA STERLING HOLLANDER, A.B., M.D. *International Universities Press*, 227 West 13th St., New York 11, N. Y. 1947. \$5.00.

The practical nature of this book is evidenced by the fact that the author opens with a discussion of the economic aspects of allergic diseases, and then discusses the question of heredity, the impossibility of making one standard classification for all such syndromes and the difficulties in diagnosis and treatment. Then he goes on to emphasize, in this order, the need for complete histories, for complete physical examination and for complete laboratory examination.

The various manifestations of allergy, the various modes of diagnosis and the very best in treatment are set forth clearly and without waste of words. The essential points of many case histories constitute a valuable feature. The book is a condensation of a wealth of material from many sources plus a description of the author's own original methods and the lessons of his large experience.

**IF YOU NEED AN OPERATION**, by RICHARD A. LEONARDO, M.D., Ch.M., F.I.C.S. *Froben Press*, 4 St. Luke's Place, New York 14, N. Y. 1937. \$3.00.

Chapter heads include preparing for the operation, the operation, after the operation, if you need an appendix operation (or various other kinds of operation—12 in all), operations on the genitourinary organs; and a final chapter, What about the future?

The book is written for the lay reader. The question must arise in many minds whether the information supplied will do more good than harm in the aggregate. This reviewer would think that the matters treated of could be safely left to the discretion of physicians and surgeons having charge of each individual case, and that they not be annoyed and hampered by questions based on what the patient had read in, "If You Need an Operation."

**PHYSICIAN'S HANDBOOK:** Fourth edition, by JOHN WAKENTINE, Ph.D., M.D., and JACK D. LANGE, M.S., M.D. *University Medical Publishers*, P. O. Box 5067, Chicago, Ill. \$1.50.

This little book summarizes briefly diagnostic procedures, including those of the laboratory, in a very helpful way. The significant additions to our diagnostic armamentarium in the two years which have elapsed since publication of the last edition are included. Especially noteworthy are the parts which give the very latest on antianemic drugs, sedatives and hypnotics, nervous system stimulants, antimalarials, diuretics, sulfonamides, penicillin, streptomycin and tyrothricin.

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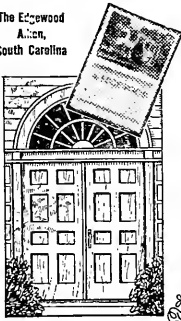
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JAMES M. NORTHINGTON, M.D., Editor

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No. 6

## Diagnosis and Treatment of Trigeminal Neuralgia\*

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**T**HE PAIN of tic douloureux is one of the most severe to which the human may fall heir. During a paroxysm the patient is completely incapacitated and the suffering may well deserve the greatly over-worked descriptive word, excruciating. Fortunately the surgical treatment of this severe affliction is eminently satisfactory and is indeed one of the most successful procedures in the neuro-surgical armamentarium. However, an unequivocal diagnosis must be made before any surgical procedure is contemplated. The purposes of the present paper are: (1) to state the symptoms of classical tic douloureux; (2) to mention the clinical entities that must be considered in differential diagnosis; (3) to set forth the proper methods of treatment of tic douloureux; and (4) to attempt to dissipate some of the misconceptions that exist as to the results of operative treatment of this condition.

### DIAGNOSIS

The essential factor in making a diagnosis of tic douloureux (synonyms: trifacial or trigeminal neuralgia, Fothergill's disease) is a correct evaluation of the character of the patient's pain. It has been said that a "telephone diagnosis" can be made as the condition can be accurately diagnosed by simply listening to the patient's description of his ailment. The typical attack occurs in paroxysms of

sharp, stabbing, lancinating pains which may occur in any or all of the divisions of the fifth cranial nerve. The mandibular division of this nerve is involved most frequently with the maxillary branch being second in frequency of involvement. Although the patient may state that the attacks of pain last several hours, careful questioning will elicit the information that the pain has occurred in paroxysms during that period and has not been constant. The mode of onset is always sudden and without warning. Eating, talking, washing, or even a breeze touching the face may precipitate these agonizing attacks. In many cases there are trigger zones, usually around the lips or nares, and the patient soon notes that touching these zones will call forth an attack of pain. Often the patient refers his initial attacks to a tooth and it is not uncommon for a patient to become completely edentulous because of his or her physician's insistence that the teeth are the causative agents. Many patients lose much in flesh and strength because the act of eating is so painful. The course of the disease is characterized by exacerbations and remissions which may last for months or occasionally even years. Neurological examination is completely negative. Diagnosis therefore must rest upon the history and careful elicitation of the character of the pain which is pathognomonic of the condition.

Although classical tic douloureux may occur in young individuals it is almost exclusively a disease of the elderly. The initial attacks occur most fre-

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quently in the sixth and seventh decades of life. There appears to be a definite seasonal incidence of this condition, the majority of attacks occurring in the spring and fall. It is more common in women than in men and there is a slightly greater incidence of pain on the right than on the left side.

The pathogenesis of tic douloureux has not been definitely established. Some authors, notably Harris, hold that peripheral sepsis, mainly resulting from carious teeth, is the noxious agent, but this theory hardly accounts for the attacks that begin in many people long after they have become completely edentulous. Others believe that vascular changes about the sensory root precipitate the attacks. Still other workers indict the thalamus, but this view has few adherents. It is generally felt that in the great majority of cases no definite etiological agent has been discovered. It may be that tic douloureux is only a symptom that may be caused by a variety of pathological factors.

#### DIFFERENTIAL DIAGNOSIS

**Dental disease**—Dental caries, abscesses or even pyorrhea may cause severe facial pain. The pain, however, is usually constant, aching or throbbing in character and well localized. There is usually evidence of local infection such as swelling and erythema and there are no trigger points.

**Sinus disease**—The pain resulting from infection of the paranasal sinuses is usually dull and aching in character. There is a history of upper respiratory infection and usually profuse postnasal discharge in addition to tenderness over the affected sinuses. In doubtful cases failure of the sinuses to transilluminate and roentgenological evidence of clouding will confirm the diagnosis.

**Temporo-mandibular syndrome**—This condition sometimes causes diagnostic difficulty. However, the pain is usually constant and is aggravated by any movement of the jaw. There is tenderness over the affected temporo-mandibular joint and a creaking of the joint can be heard and felt. Roentgenograms reveal arthritis of the joint.

**Neoplasms**—Tumors of the sinuses or nasopharynx may cause severe facial pain. Usually the pain is severe, constant and aching in character. Adequate clinical and roentgenological study will reveal the cause of the pain. In such cases section of the fifth nerve should be contemplated early as a palliative procedure.

**Histamine cephalgia**—Pain in this condition usually occurs in the evening and is very severe. Onset is sudden with the pain building up in severity and remaining constant for thirty minutes to several hours. The pain is unilateral and is confined to the frontal and temporal regions and the eye. There is profuse lacrimation of the affected eye and frequently conjunctival injection. Alcohol

often precipitates an attack and the subcutaneous injection of histamine will regularly cause an exacerbation of pain. In a typical case there is little confusion in diagnosis. The proper treatment is histamine desensitization.

**Migraine**—Ophthalmic migraine produces severe attacks of pain around the affected eye that gradually build up in intensity and are often accompanied by vomiting. The familial incidence and accompanying phenomena such as scintillating scotomata point to the proper diagnosis.

**Ocular pain**—Glaucoma and iritis may cause severe referred facial pain but the visual disturbances will indicate the underlying pathology.

**Intracranial disease**—Aneurysm of the internal carotid artery may produce severe ophthalmic pain but there are usually accompanying extra-ocular muscle palsies. Tumor of the Gasserian ganglion may produce severe, constant facial pain but neurological examination will reveal sensory changes in the domain of the affected nerve. Other neoplasms or infections of the central nervous system may cause facial pain but rarely cause difficulty in differentiation from tic douloureux.

**Atypical neuralgias**—This group of cases may cause considerable difficulty in diagnosis. The pain is usually described as aching and attacks last for many days. The vast majority of these patients have psychiatric difficulties as the basis for their pain. They are extremely susceptible to suggestion and, after being questioned about symptoms of tic douloureux by one physician, may present these very symptoms to another physician. These patients must be very carefully evaluated as under no circumstances must they be subjected to surgical intervention.

#### TREATMENT

Many medical measures have been advocated for the treatment of tic douloureux. Liver extract, vitamin B<sub>1</sub>, and ferrous carbonate—each has had its adherents and its day of trial, only to fall into discard. There is no medical treatment of significance or lasting value in the treatment of tic douloureux. It must always be remembered in evaluating any treatment of this condition that tic douloureux is characterized by exacerbations and remissions. All of these patients will have spontaneous remissions and the occurrence of a remission during medicinal treatment does not prove the benefit of such treatment. Long-term study indicates the complete inefficacy of any medical treatment of tic douloureux. Trichlorethylene may be used to tide the patient over for a short time, as inhalations of this drug will produce temporary benefit. This drug, however, is quite toxic and is of no curative value.

Alcohol injection of the second or third branches of the fifth nerve may be resorted to in certain

cases. The first indication for this method of treatment is in the poor surgical risk. Severe cardiac or debilitated patients should have alcohol injection because of the slight dangers of operative intervention, but for the vast majority of patients surgery is the proper treatment. The second indication for alcohol injection is the atypical case in which a definite diagnosis cannot be made. These cases should never be subjected to surgery unless complete relief was obtained by the injection. In some few individuals it is advisable to perform injection in order to acquaint them with the numbness that will result from operation. However, the vast majority of patients with tic douloureux are candidates for early surgery.

The operative procedure of choice in the treatment of this condition is a retrogasserian neurectomy by the subtemporal approach. The operative details of this approach will not be mentioned as they have been published over and over. Suffice it to say that a selective section of the sensory root can be attained, leaving intact the fibers carrying corneal sensitivity. Such selective section removes the possibility of corneal complications when the ophthalmic division of the nerve is not involved in the pain. It is also frequently possible to spare the motor branch to the masseter muscles. The operation is performed in the sitting position under local anesthesia with the occasional addition of intravenous anesthesia. The patients are ambulatory the day after operation and usually leave the hospital within a week following operation. The relative safety of the procedure is attested by the fact that the mortality in large neurosurgical clinics over the country averages 0.5 per cent. On the neurosurgical service of Dr. Claude C. Coleman in Richmond over 600 patients were operated upon without a single fatality. These figures are even more remarkable when one remembers that tic douloureux is primarily a disease of old age.

Another surgical technique is the suboccipital operation advocated by Dandy. It is possible by this procedure to preserve some sensation in the face while abolishing pain and it is probable that the incidence of corneal complications is less. However, this procedure is more hazardous than the subtemporal and this fact seems to preclude its use as a routine method.

Recently a medullary tractotomy has been proposed by Sjöqvist in order to preserve touch while abolishing pain. This operation is much more hazardous than any other type of operation used for the relief of facial pain and is frequently followed by complications such as ataxia. Although tractotomy may eventually be perfected sufficiently to warrant its regular use, at the present moment it certainly is not a procedure for routine use.

#### COMPLICATIONS

There are many misconceptions regarding the results of subtemporal section of the fifth nerve. The region of the face involved will remain numb following operation, but the patient with true tic douloureux gladly substitutes this numbness for the former excruciating pain. Almost all patients soon become accustomed to the loss of feeling and are not at all incapacitated by it. Rarely there is a spread of pain into the domain of the part of the nerve that was spared at operation and thus the patient has a recurrence. This is a very rare occurrence and is easily treated by completing the section of the nerve.

In less than five per cent of the cases there are paresthesias, described as burning or crawling sensations. Even more rarely are these paresthesias sufficiently severe to be troublesome.

Corneal complications may occur when the entire sensory root has been avulsed. In the vast majority of cases it is possible to save sufficient fibers to preserve corneal sensation and thus avoid these complications. However, when the entire root has been avulsed the patient must be warned as to the care of the anesthetic eye. At the first sign of inflammation the eye must be protected and it is sometimes advisable to temporarily suture the lids. The usual case will soon recover from the keratitis.

The commonest misconception regarding the operative treatment of tic douloureux concerns the incidence of facial paralysis. It is true that a very occasional case will develop a postoperative facial palsy, but this paralysis is temporary, usually lasting only a few days or perhaps weeks. The very small incidence and temporary nature of the facial paralysis remove it from the class of major complications.

#### SUMMARY

Tic douloureux or trigeminal neuralgia is a definite, fairly common clinical entity characterized by sharp, shooting, lancinating paroxysms of pain in the distribution of the fifth cranial nerve. The essential factor in arriving at the correct diagnosis is proper evaluation of the character of the pain. Each patient suffering from facial pain must have a careful physical and neurological examination as well as a careful consideration of the history of the affliction in order to exclude such conditions as dental or sinus infection, neoplasms, migraine, histamine cephalalgia, intracranial disease, and atypical neuralgias usually with a psychiatric basis. In the typical case subtemporal retrogasserian neurectomy is the treatment of choice because of its excellent results and high degree of safety. In atypical cases and in those patients whose general physical condition precludes operation, alcohol injection of the affected nerve is the treatment of

choice. Operative treatment by the subtemporal approach is attended by rare complications which are usually of minor nature. Operative treatment of this distressing condition is therefore eminently satisfactory; indeed it is one of the most successful procedures in the domain of surgery.

#### Discussion

DR. EVRETT O. JEFFREYS, Professor of Neurological Surgery, Bowmar Gray School of Medicine: Mr. Chairman, I wish to congratulate Dr. Troland upon his comprehensive discussion of the subject, *tic douloureux*, in such a short period of time.

I would like to ask one or two questions—what he does in cases in which burning paresthesias occur in occasional tic following selective section of the sensory root? I should also like to ask what his experience has been with the medullary tract by either the modification by White or the modification by Dandy? I should also like to ask what his explanation is for the preservation of sensation to the side of the face when there is at the same time complete loss of pain sensibility.

DR. H. R. MASTERS, Richmond, Va.: One thing I should like to caution against—I have seen a group of younger people, probably younger than those Dr. Troland has seen, and we do not like to recommend them for operation until other measures have been given fair trial. Some of these neuralgias are recovered from under strictly medical care; some require alcohol injections.

In functional cases of neuralgia, we must study people thoroughly and try to determine their conflicts. It is frequently some guilt reaction or feeling of inadequacy, in which an individual develops pain because facing the world is painful, difficult for him. We should increase the confidence of these people, give them minor things to do and continue suggestive therapy until we get them established in some form of activity before they will recover.

DR. CHARLES E. TROLAND (closing): I want to thank Dr. Jeffreys and Dr. Masters for discussing my paper.

I agree that we certainly don't feel like subjecting patients who are young to early surgery.

One thing that causes a great deal of difficulty is occurrence of neuralgia pain with psychopathic basis. We do not operate on any of these distressing cases. They are sent to another clinic. Recently we were making the rounds in a neurosurgical clinic. The surgeon had a patient with subtemporal and subsequent occipital operation. He asked the patient if he still had pain. I never heard such a flow of invectives. He was not happy to have us making the round on that particular occasion.

As to cases with complications like paresthesias I don't know what we can do. We have a lot of trouble with paresthesias. Some of them get well themselves, without treatment so far as we know, following operation for tic.

As to operation for preserving sensation of the face while doing away with pain, Dandy has treated a large number of patients by sectioning the root at the pons. He cut only the fibers that go downward, in the descending tract.

#### TRIWEEKLY ARSENOTHERAPY

A SAFE AND EFFECTIVE AMBULATORY TREATMENT REGIMEN FOR EARLY SYPHILIS

(A. L. Weiner, in *Cincinnati J. of Med.*, May)

Penicillin has become firmly established as the safest of the known effective antisyphilitic drugs. Severe major reactions are infrequent.

The chief disadvantage of penicillin therapy of syphilis has been the necessity of hospitalization which entails additional expense and loss of the patient's earning capacity during hospitalization.

We administer a total of 40 injections of the arsenical and 10 injections of bismuth subsalicylate. The arsenical drug (mostly mapharsen) was given in full dosage of 1 mg. kg. of body weight—usually .04-.06 gms.—three times per week for 13½ weeks and bismuth subsalicylate 1 c.c. was given once per week during the first 10 weeks. No attempt at selection of patients was made but the treatment was limited to patients with primary and secondary syphilis, early latent syphilis and syphilis complicated by pregnancy.

Untoward reactions to treatment were surprisingly infrequent among the 714 patients receiving the triweekly antisyphilitic regimen. Severe reactions were very rare and there were no deaths. Minor reactions occurred at the same rate as when mapharsen is administered on a weekly or semiweekly schedule.

On their second clinic visit it appeared that most of those with primary or secondary syphilis lesions experienced some intensification of the presenting signs and usually a mild febrile reaction following the initial injection. Nausea, vomiting or mild diarrhea—occurred in 40-50 per cent of the patients. These could frequently be eliminated by manipulation of the dosage or type of the arsenical drug or by dissolving one or two lozenges of anaesthesia on the tongue 15-30 minutes prior to the injection. In a few instances reactions were so protracted or persistent that it was necessary to interrupt the treatment. These patients usually did not tolerate arsenical drugs even if given only once per week. In the one patient who became jaundiced, this occurred following the 39th arsenical injection and though the patient refused to be hospitalized, he made a rapid recovery without sequelae indicating that the hepatitis was probably of the associated infectious hepatitis type.

Dermatitis occurred in five instances. In two patients, the eruption showed the usual poorly defined and benign characteristics of the maculo-papular group that one anticipates with mapharsen and other newer arsenical drugs. These patients cleared rapidly without hospitalization or BAL therapy, treatment completed with penicillin. Three patients developed a "fixed" type of arsenical eruption and while this is usually a harmless affair, the treatment was discontinued mostly for psychologic reasons. For the most part the untoward cutaneous reactions were seen late in the course of treatment.

A somewhat alarming reaction characterized by sudden onset, high fever, chills, photophobia, conjunctivitis and edema of the periorbital tissue and face, and subsiding spontaneously in about a week, was noted in four instances.

The reaction is seen almost uniformly in the first or second week of treatment. Further arsenic injections may induce recurrences of the reaction which may endanger the patient's life.

Seven hundred and fourteen patients with early syphilis have been treated over a three-year period by means of 13½ weeks program of injections of mapharsen three times per week combined with weekly injections of bismuth subsalicylate.

Follow-up observation of these individuals indicates that the above antisyphilitic regimen is safe and effective in primary, secondary and early latent syphilis.

This treatment schedule is presented as a practical office procedure.

Penicillin in oil and beeswax (P. O. B.) alone or in combinations with arsenic and bismuth cannot as yet be recommended for routine use in the treatment of early syphilis.

When further experience and observation establishes the value and optimum technic for this method of therapy, the triweekly regimen would still be useful for the occasional patient who has early syphilis and who is penicillin sensitive.

## Gaseous Distention of the Abdomen: Its Significance, Prevention and Treatment\*

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**G**ASEOUS DISTENTION of the abdomen should be prevented. This can be done almost regardless of the type of case provided proper methods are instituted early. However, once developed it must be considered both from the standpoint of the disease process causing it as well as from its own untoward effect upon the patient. Such underlying conditions as intestinal obstruction, perforation, stangulation and peritonitis must be recognized early and corrective measures instituted. In such conditions relief of distention will serve as a valuable preoperative measure, or as an important adjunct to other treatment.

Abdominal distention, regardless of its cause, interferes with intestinal absorption necessitating giving water, electrolytes and nutrient material parenterally. It causes the patient to be nervous and restless, depleting his physical reserve. The upward pressure upon the diaphragm diminishes expansion of the lungs interfering with oxygenation and predisposing to atelectasis and pneumonia; it also interferes with cardiac function. The increased intra-abdominal pressure retards the venous return from the legs favoring phlebothrombosis with possible embolism. In the presence of distention, especially with vomiting, operative wounds of the abdominal wall are more subject to complications, even dehiscence and herniation. The intraluminary pressure in the stomach or intestine may cause leakage in a suture line by interfering with healing. The peritoneal cavity is less able to withstand contamination and combat infection on account of interference with the circulation of the distended organs.

The prevention of distention promotes the general well-being of the patient. It results in earlier resumption of peristalsis. It favors satisfactory wound healing. It reduces morbidity and mortality.

Abdominal distention is most commonly the result of the accumulation of gas and fluids in the stomach and intestines. X-ray examination shows a characteristic pattern and that the distention is due predominately to gas. Swallowed air has been established as the main source of the gas. This is likely explained by the fact that nitrogen is poorly absorbed from the intestine due to its high tension in the blood. A relatively minor source is from

bacterial decomposition of food. To prevent such accumulations one must reduce to a minimum those factors which cause atony and obstruction of the intestine. To be guarded against is operative trauma especially in the nature of rough handling of the intestines, the use of excessive gauze packing, and the use of hot applications; likewise, unduly prolonged and deep anesthesia. Other causes of atony are back injuries and certain infectious conditions such as pneumonia.

In conditions where distention is likely to develop it is important to institute early preventative measures. The same measures are applicable but less effective when distention is present. Limiting intake by mouth is generally adequate in the less serious cases. In this regard the chewing of gum is inadvisable as it is attended by swallowing considerable air. A much more effective preventative measure is the use of the inlying stomach tube to which constant suction is applied. This prevents the passage of both liquids and gas past the pylorus. It is also of value where distention has already developed in that it prevents adding an additional load upon the intestines, and also by removing contents which regurgitate from the upper loops of intestine into the stomach.

In the presence of distention the Miller-Abbott tube is a more effective measure as it empties the intestine from above downwards, thus permitting it to regain its tone. Once past the pylorus a small rubber balloon at its end is inflated. Suction upon the tube empties the loop of bowel thus permitting it to regain its tone and push forward the balloon which acts as a bolus. To facilitate its passage through the pylorus in difficult cases various devices are made use of, such as the fluoroscope, a silette, mercury in the balloon and a pilot of lead shot.

The Miller-Abbott tube may be introduced pre-operatively to prevent distention of the bowel distal to it, and especially to protect from undue tension an intestinal suture line. In such cases it is well to use in addition the inlying stomach tube with suction to prevent distention of the stomach and of the intestine proximal to the end of the Miller-Abbott tube.

Tubes used for decompression of the stomach and intestine are removed only after distention has been relieved, peristalsis has been resumed, and the continuity of the passage has been established.

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It is to be emphasized that once distended, the intestine only slowly regains its tone. A trial occlusion is often of value in preventing too early removal.

Upon resumption of peristalsis neither tube will be completely effective, as some of the intestinal contents will by-pass them even to the extent of the patient's having a bowel movement. While using these tubes it is important to guard against dehydration, chloride depletion, and other metabolic disturbances. This is particularly important in gastro-duodenal suction.

While the Miller-Abbott tube is most effective, and the most desirable means of decompressing the small intestine, its passage through the pylorus is often attended by considerable difficulty and at times cannot be accomplished. In such cases an enterostomy may be of value. An enterostomy effectively protects a suture line shortly distal to it. In the presence of distention it is less effective than the Miller-Abbott tube as it empties only one lower loop, necessitating the proximal bowel to propel its contents downward. This requires a moderate amount of bowel tone which is not always present. A properly formed enterostomy can be abandoned with ease provided there is no obstruction distal to it. Persistent leakage around an enterostomy generally results in a most troublesome excoriation of the skin; in some such cases the only satisfactory method of treatment is resection of the enterostomy loop with an end to end anastomosis, provided of course that there is no distal obstruction.

In case of large intestine anastomosis an appendicocostomy performed at the time of operation forms a further safeguard against increased tension in the large bowel. It is easily abandoned by removing the tube. The incidental removal of the appendix is an added advantage. Distention due to obstruction of the large bowel may require colostomy. In such cases the additional use of either or both the inlying stomach tube with suction and the Miller-Abbott tube may be of decided advantage.

Thus far all attention has been directed toward preventative measures and to the removal of intestinal contents proximal to the lowermost involved bowel. Measures from below directed toward causing an emptying by rectum are of little value and even harmful at times. The audible demonstration of gas passed through the rectal tube is of comfort to the attendant; however, once gas has reached the rectum it would soon pass of its own accord either audibly or insensibly. Except in case of solid matter or fecal impaction in the rectum or sigmoid an enema is of little value as at most it serves as a mild stimulus to peristalsis. In case of atony of the bowel the enema fails to be expelled and only increases the distention by adding to the

contents of the abdominal cavity, often exhausting the patient. The so-called high enema is a snare and delusion. It is both difficult and dangerous to attempt insertion of the rectal tube more than a few inches above the anal orifice. As can be demonstrated roentgenologically the height of the enema is determined by the height to which the column of fluid reaches. This in turn is dependent upon the condition of the bowel, the volume of the fluid, and the position of the patient.

Parasympathetic stimulants are of value primarily in case of mild atony of the bowel. If ineffective in emptying the bowel there is danger of the reaction resulting in increased distention. At times their use is attended by systemic reaction in nature of rapid pulse, weakness and sweating. Their value as a prophylactic measure is not well founded. They are especially contraindicated in presence of a recent intestinal suture line or mechanical obstruction.

The oxygen tent has been found of distinct value in abdominal distention. It relieves the load on the heart and lungs. Also it may make possible increased absorption of nitrogen by the intestines, due to lowering its concentration in the blood.

In every case of abdominal distention there must be considered the possible presence of intestinal obstruction due to strangulation. In such cases the use of intestinal decompression is to be employed in the preparation of the patient for operation as well as a post-operative measure. One must guard against a false sense of security based upon the remarkable relief afforded.

#### SUMMARY

Abdominal distention generally can be prevented, but when present should be treated energetically as it has various untoward effects upon the patient. The source of the gas is mostly from swallowed air. Stomach and intestinal intubation with suction are very effective. Enemata and parasympathetic stimulants are of limited value and often harmful. Intestinal strangulation must not be overlooked.

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#### Discussion

DR. JOHN W. DEVINE, Lynchburg, Va.: I certainly enjoyed this paper. It was right to the point and extremely important. I would like to only agree and emphasize a few points already made. One is we usually think of passing a Miller-Abbott tube eight hours too late. After reverse peristalsis it is extremely difficult to pass a tube past the pylorus. If we can use the tube before reverse peristalsis is established we can still get it past the pylorus.

A method more helpful is to put mercury into the bulb of the Miller-Abbott tube. It is less confusing to nurses. For nurses who are unfamiliar with this procedure it makes it very helpful.



Last week we had a case of resection of the small bowel which required that the Miller-Abbott tube be passed and while the tube was in place the patient developed an acute dilatation of the stomach. I happened in the hospital a few minutes afterward. She turned completely cyanotic, had pain in the region of the heart and the nurse thought she had a coronary occlusion. Her hands were cyanotic to the wrists and she had vomited early that morning material which looked like feces. I passed the tube on top of the tube already through the pylorus and took out 32 ounces of feces-like material. The patient was immediately relieved of symptoms and went to sleep. Oxygen was started, via tent. That, too, I would like to emphasize when done soon enough or often enough is helpful.

It was an extremely important subject and extremely well put.

DR. B. E. RHODY, Greensboro, N. C.: It seems to me in these cases of obstruction or gaseous distention, we first ought to determine whether the gas is in the bowel or the peritoneal cavity. Oftentimes just a scout film will tell you whether that obstruction is in the large or the small bowel. If the distention has gone on for some time is tremendous, it is difficult to determine just where any causative obstruction may be. If part of the bowel is fixed, say in the lower part of the descending colon, a CA causing a narrowing of the lumen oftentimes above that, or in cases of atonic constipation where you have dilatation of the bowel above, especially in elderly people, you also have a redundancy of that bowel and the bowel may fold, producing acute angulation and obstruction. With the patient placed in a horizontal or Trendelenburg position frequently in your persistence in giving enema you will succeed in getting some of the fluid by and you may be able to determine more definitely whether there is distention of the small bowel continuous from below or whether the pathology is located in the small bowel.

DR. GEORGE WILKINSON, Greenville, S. C.: There is one thing Dr. Prioleau didn't mention that I think is the most important factor in the whole thing, and that is keeping the old patient in bed. Most any patient will have distention if you keep him in bed too long.

The other point that was made. Patients should have a little prophylactic treatment against aerophagia. You might as well tell them firmly that air-swallowing is responsible for most "gas on the bowels." But I caution you about one thing which I will illustrate by a case report. I had a woman in the office, a very nice lady, and her husband had been a patient of mine and she just swallowed air and belched and I was trying to explain what the result was about it and her husband was in the room—it is a mistake to have the husband in the room—and he said, "Doc, you mean she is like a stump-sucking mule?" I said, "Yes." The patient never did come back. You can do a good deal with these people if you tell them convincingly. "Don't call it gas, call it air, pure atmospheric air—a little modified truly, but not greatly. I think they understand better when you say "air" than when you say "gas."

DR. MOORE: Tell us how you stop them from swallowing air, please, Sir.

DR. WILKINSON: I just swallow air and show them how I can belch. I say, "You say you can't help it. I can show you exactly how it is done." I swallow three or four big swallows and say "That is the way you do it." They are not hard to convince about that. Another thing; I put a tube through the nose into the stomach and leave it in, and as long as they have the tube down they can't belch. The air comes back out of the tube as fast as they swallow. Then I let them hold a mirror in front of a fluoroscope and see themselves swallow air and stand up with

some attendant familiar with the fluoroscope and let them look at the mirror. They are not so hard to convince once they feel like you are not trying to make fun of them.

DR. WM. H. PRIOLEAU (closing): I feel as if I have been let off rather easily, and I want to thank the discussers.

THE NATIONAL RESEARCH COUNCIL has announced the initial five awards under a \$100,000 fund established by MERCK & CO., INC., to provide promising young scientists with further research training in the closely allied fields of chemistry and biology. The awards were made by the Council's Merck Fellowship Board as announced in the magazine *Science*, to:

Joseph Lein, New York City, for advanced study on the enzymes produced by genes in *Neurospora*

Nevin Stewart Scrimshaw, Rochester, New York, for a biochemical study of factors associated with toxic complications of pregnancy and fetal abnormalities

Lorin John Mullins, Palo Alto, California, for advanced work on the experimental modification of permeability phenomena in marine animals.

Arthur Beck Pardee, Pasadena, California, for researches in general physiology, histology, cytology and related fields as preparation for a career in medical research

B. Roger Ray, Nampa, Idaho, for work on the determination of movements of salts through certain nonaqueous solutions by means of high speed centrifugation.

These first Merck Fellowships are for the year 1947-1948. The recipients were selected from a field of forty-nine applicants. The amounts of the awards vary with the circumstances in each case.

The Merck Fellowship Board, which was appointed by the Council, consists of the following members:

Dr. A. N. Richards, University of Pennsylvania, chairman; Dr. George W. Beadle, California Institute of Technology; Dr. Hans T. Clarke, Columbia University; Dr. George O. Curme, Jr., Carbide and Carbon Chemicals Corporation; and Dr. Rene J. Dubos, Rockefeller Institute for Medical Research. Dr. Bronk also is a member, ex-officio.

#### VITAMINS IN AFRICAN BEER

(Leon Gelberg & J. M. Thorp, Johannesburg, in *Sou. African J. of Medical Sciences*, Dec.)

In general the processing of foodstuffs for human consumption tends to have a deleterious effect upon the vitamin content. It is of particular interest, therefore, to study processes by which the vitamin content is enhanced.

The consumption of as little as two pints a day of Kafir beer will provide a very useful supplement of the three vitamins assayed—thiamin, riboflavin and nicotinic acid—and presumably of other members of the vitamin B complex. The widespread incidence of riboflavin and nicotinic acid deficiencies serves to emphasize the useful role which may be played by fermented foods in achieving vitamin balance. The effect of substituting tea and coffee for these beverages in the diet cannot but be deleterious.

The recognized importance of intestinal biosynthesis in man and animals makes it probable that the availability of the vitamins in fermented foods is of a high order.

In the brewing of Kafir-beer significant increases of all three vitamins occur at the stages of souring and fermentation. These increases more than compensate the losses which occur at other stages in the brewing process. The final beer is not merely an aqueous-alcoholic extract of the vitamins present in the original meal and malt, but contains twice as much thiamin and nicotinic acid and three times as much riboflavin as the original ingredients.

Four products of acidic fermentation show insignificant increases in riboflavin and nicotinic acid, but slight losses in thiamin due to preliminary boiling.

# Coronary Thrombosis and Myocardial Infarction with Special Reference to Prognosis. A Series of Fifty Cases\*

ERNEST LEE COPLEY, M. D., Richmond Virginia

THE DEVELOPMENT of knowledge of coronary thrombosis and myocardial infarction as one of the commonest causes of death, since its first publication by Herrick of Chicago in 1912, constitutes an amazing chapter in the history of medicine. In two epoch-making papers published in the *Journal of the A. M. A.* in 1912,<sup>1</sup> 1919,<sup>2</sup> this acute observer and patient investigator convinced the medical world that coronary artery obstruction ranks among the highest as a destroyer of life.

His first report (1912) under the title "Clinical Features of Sudden Obstruction of the Coronary Arteries," attracted little interest and stimulated no literary response. During the decade following publication of the second (1919) on "Thrombosis of the Coronary Arteries," Libman, Pardee, Williams, Wilson, White and other leading internists became alert to recognize the signs and symptoms of this newly-described (but certainly old) type of heart disease and made great progress in working out the treatment.

The increasing number of reported deaths from the disease is certainly a matter largely of improved diagnosis. In a study<sup>3</sup> several years ago, I reported the number of deaths, in Virginia, recorded as due to this cause for the eleven-year period from 1930 through 1940. Evidently Virginia doctors were slow to follow the new teaching, for such deaths for 1930 were set down as 126, for 1931 only nine more. From this year on, however, the number mounted rapidly and steadily from 247 in 1932 to 1401 in 1940.

Now I can supplement these earlier figures with a report for 1941 through 1946, which shows the same steady increase, the figure for 1941 being 1556, while for 1946 it is 2100. As was to be expected, the rate of increase of recognition of the disease was much slower in the last five years. The statistics for other states are similar to those for Virginia. Our knowledge of the number of recovered cases, the extent of the disability and the number of years lived after an attack, is not as full as we would like it to be. Many series of cases have been reported which indicate an increase in the number of recovered cases. I shall summarize a few of the more significant reports.

In a detailed study<sup>4</sup> Bland and White analyze 200 cases with respect to outcome, as follows: 38

patients died within the first month, 81 within five years, 31 within ten years; while 50 (25 per cent) lived two years or more. Twenty-five of the 50 died after the ten-year period. They concluded from this study that the outlook for those having experienced such attacks is more favorable than it has been heretofore considered.

A similar study<sup>5</sup> of 62 cases was made by White. The average duration of life after the attack in 32 was fifteen-and-a-half months, ranging from a few hours to seven years. The average age of the 30 survivors was twenty-four-and-a-half months at the time of his report—making an average of 20 months for the series.

Cooksey<sup>6</sup> analyzed 53 cases and reported a mortality of 21 patients. Of the remaining 32, he stated 25 were restored to their previous occupation. On the basis of his study, Cooksey has come to regard the prognosis as more hopeful.

I shall present an analysis of 50 cases, the majority of them private cases, in all of which clinical and electrocardiographic data have substantiated the diagnosis. I shall also mention a few of the important factors, which I believe have a bearing on prognosis.

The study covers twelve years. Twenty-four patients (48 per cent) are still living. (See Table I.) One has led a normal life for twelve years since the attack. One each has lived 7, 6 and 5 years, respectively. Four have lived 4 years; five, 3 years; two, 2 years; five, 1 year; and four have had attacks within the past year from which they are recovering. Six of the 24 patients were women, with an average age of 64 years.

TABLE I  
*Analysis of Twenty-four Cases, Patients Still Living*  
Average age of patient—60 years

No. of Patients	Years Lived	Average Age
1	12	70-75 (5)
1	7	65-70 (5)
1	6	60-65 (4)
1	5	55-60 (6)
4	4	50-55 (4)
5	3	
2	2	
5	1	
4	Less than year	

Present status as to incapacity: Ten (20 per cent) are leading a normal life; eight are restricted in their activities and six are greatly restricted or retired. (See Table II.)

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgfield Inn, Greensboro, N. C., March 3d and 4th.

TABLE II  
*Present Status of Twenty-four Patients*

Fully recovered and leading normal life.....	10
Partially recovered, restricted activity.....	8
Greatly restricted or retired.....	6

Twenty-six patients (52 per cent) have died. (See Table III.) Fifty per cent of these died within the first month; eight (30 per cent) died within the first year. It is seen, therefore, that 21 (80 per cent) died within the first year. Two lived 2 years each, while one each lived three, four and five years, respectively.

TABLE III  
*Analysis of Twenty-six Fatal Cases*  
Average at death—62 years

No. of Patients	Time of Death	Average Age
13	Immediate	65
8	Within year	57
2	Two years	70-72
1	Three years	64
1	Four years	58
1	Five years	50

Nine were women, average age—65

The immediate mortality for the fifty cases was 26 per cent; the mortality for the first year 42 per cent. This is high when compared to the prediction of Bland and White,<sup>4</sup> to-wit: 10 to 15 per cent; but favorable when compared to the early reports, which described, for the most part, massive thromboses and infarctions and which were nearly all fatal. The prediction of the extremely low mortality undoubtedly takes into consideration the recognition and inclusion of minor infarctions, obviously less fatal, plus the finding of sequelae of old infarctions in routine autopsies; which suggest that in many cases coronary thrombosis had gone undetected and the individuals lived out the ordinary span of years. Even the most favorable reports concerning outlook, however, do not obviate the fact that in most the disease is to be dreaded as one of the most serious threats to life and to capacity for employment.

Numerous factors influence the outcome of an attack. Age is undoubtedly an important factor. The average age of the patients in the 13 cases herein reported of immediate death was 65 years, while eight with an average age of 57 died within the first year. Hypertension, plus advanced age, was always fatal in the cases coming under my observation.

Coronary thrombosis is an emergency of the first magnitude, and early diagnosis and treatment are obviously imperative in order to save heart muscle whose blood supply has been suddenly cut off. Morphine in half-grain doses, nitroglycerine, and aminophyllin intravenously all may be necessary to relieve decompensation. These drugs can be easily administered in the average home.

One of the most important factors is the co-operation of the patient. More often than not this is difficult to obtain, as all of you who treat such patients have found out. Once the pain and discomfort are relieved, most such patients feel the danger is past. A brief resumé of two cases will illustrate the necessity of coöperation from the patient in enforced rest.

A white man, aged 68, a hotel employe, was first seen at 8 a. m., February 25th, 1944. He had awakened three hours before with a severe substernal pain radiating down the medial aspect of both arms. Agonizing pain had persisted two hours, accompanied by that fear of impending death, which few of us will treat lightly. An ecgm. taken the following day indicated coronary thrombosis with occlusion of a posterior coronary vessel. An elevated temperature, range 100° to 102°, ensued. Several blood examinations revealed a marked leukocytosis and a distinct increase in the sedimentation rate.

Morphine in liberal doses was administered, followed by sedatives. After a week of complete rest, he refused to remain in bed. Within a few weeks, heart compensation became increasingly inadequate and liver engorgement, visible pulsation of the neck veins and pitting edema of the extremities and dependent parts developed. Morphine and digitalis gave some temporary relief. The illness ran a downhill course ending in death four months after the attack. The immediate cause of death was diagnosed terminal pneumonia.

The autopsy revealed massive thrombosis of the anterior descending coronary artery, and pneumonia of the right lower lobe.

The second case I shall present illustrates the need for coöperation, and for massage of the lower extremities:

A white woman, aged 65, was referred to me by a physician who had given emergency treatment and had placed her in a convalescent home. The woman was unconscious the first few days of her illness. When consciousness returned, she refused both medication and bed rest. Soon heart failure developed and she was, thereupon, transferred to a hospital where oxygen therapy was administered. After several weeks, cardiac compensation was partially restored. She was then allowed to sit on the side of the bed and passive movements of the lower extremities performed. While sitting propped up in bed, she complained of a sudden chest pain and died within a few minutes, six weeks after the onset of illness.

The gross autopsy done by myself revealed a massive pulmonary embolus of the right artery. The pathologists reported a healed infarct near the apex of the heart.

I believe both these patients would have lived longer had they accepted adequate treatment of complete bed rest.

#### SUMMARY

A summary of the outcome of several series of cases of thrombosis and infarction has been given, to which I have added a series of 50 of my own, encountered in the past twelve years: 24 of these patients (48 per cent) are still living—10 of them restored to normal life, 8 partially recovered, and 6 retired because of their disability. Twenty-six patients (52 per cent) have died—13 of these in the first month, eight within the first year. Therefore, twenty-one (80 per cent) of the fatalities occurred within the first year. The immediate mortality for the entire series of fifty was 26 per cent; that for the first year 42 per cent.

Notwithstanding reports of a more favorable outcome in other series of reported cases, it is emphasized the disease must still be considered one to be dreaded; one demanding the most guarded prognosis, and the greatest care in management for weeks, months or years.

Among the important factors bearing on prognosis are age and general physical condition in the particular case, promptness of diagnosis, and adequacy of management. The necessity for coöperation of the patient is emphasized.

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#### Discussion

DR. P. D. CAMP, Richmond, Va.: Dr. Copley is to be congratulated on putting out effort to follow through on his cases. I am sorry I haven't followed through on as many of mine as I should.

The figures are very interesting, particularly as to increase in recorded mortality rate from coronary thrombosis. I think whereas at first we weren't conscious enough of these cardiac diseases, probably now they are over-diagnosed. Some of the sudden deaths so attributed might have been due to something else. Of course, you can always sign out with coronary thrombosis and get by but the autopsy findings in many cases reveal death was not from coronary thrombosis. If we can get these people to rest and behave as they should, certainly we are justified in giving a more favorable prognosis, and it is a whole lot better psychology to point to somebody who lived 25 or 30 years with the disease than to say to these patients the average is only three years. That is mighty depressing. A number of physicians have this disease and I believe they will agree with that.

In regard to the prognosis, Dr. Copley covered the factors well. Of course, for these patients who have severe substernal pain for twelve hours or longer, the outlook isn't so good. If there is any failure of the left side indicated by cardiac asthma, the outlook is much worse. Likewise development of tachycardia or ventricular fibrillation makes the prognosis worse.

I quite agree that the diagnosis shouldn't be from the electrocardiogram alone, that we should take a careful history in each case. The correct interpretation of the electrocardiogram is most important, and not always easy. The companies putting so much pressure on everybody to buy electrocardiographs, unfortunately cannot sell, along with the machine, the knowledge of how to interpret the electrocardiogram. A lot of damage is done in that way.

I would like to add just one thing about the treatment—and I know that Dr. Copley will agree—which is that oxygen is certainly one of the very best things that we can offer these patients. The more I see of coronary disease, the more I think it is the most treacherous disease with which we have to deal.

DR. H. J. LANGSTON, Danville, Va.: Gentlemen, I want to say one thing about this disease and only one, as to the future of it, and that is this—most of us here may have this condition any time within the next ten years. Now what is the future of it? I have had a few cases, and one or two medical friends in Danville have had three or four cases. We have given these patients, following the recovery from the actual attack, morphine. I have one patient who 11 years ago was stricken while working in Richmond with pneumonia, and had a coronary attack and recovered sufficiently to get home. He came home, had another attack, and was unconscious for two days. After he recovered sufficiently to be setting up I have kept him on dilaudid ten years. He works for a tobacco company in the winter and in the summer he loaf. The man has been kept comfortable.

I have a medical friend in Danville who has as a patient an insurance man who was stricken five or six years ago and was given two years to live. He has taken five grains of morphine a day and been able to work some. I have never seen a morphine addict die of coronary disease. I think that should give us something to think about. Even though the narcotic people would not agree with this line of treatment, it is not only justified, it is demanded.

DR. ERNEST L. COPLEY (closing): I want to thank Dr. Camp and Dr. Langston for their comments on this paper. I thoroughly agree with all Dr. Camp has said.

As to the matter of morphine, I am reminded of one of the cases that I treated. He lived seven years after the initial attack. He was given morphine in massive doses over such a long period of time that, when I thought it was going to be necessary to send him to a hospital, I hated to send him there because he was receiving so much morphine. I couldn't get him in, fortunately. Well, the pains cleared and he didn't need any more morphine. The man died within the past year and an autopsy confirmed the diagnosis of occlusion of anterior vessels. I don't hesitate to give morphine, dilaudid, or pantopon, whichever the patient will tolerate best. I don't think we need to be sparing in the use of any of the analgesics.

I want to thank the gentlemen for discussing my paper.

THE AMERICAN CONGRESS OF PHYSICAL MEDICINE will hold its 25th annual scientific and clinical session Sept. 2nd-6th at the Hotel Radisson, Minneapolis. All sessions will be open to members of the medical profession in good standing with the A. M. A. In addition to the scientific sessions, the annual instruction courses for Technicians will be held Sept. 2nd-5th. For information address the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2.

## Experiences as a Medical Officer Aboard an LST on D-Day in Southern France\*

JOHN W. BENNETT, M.D., Burlington, North Carolina

**I**N ORDER to give a clearer picture of what actually happened, I felt that for the benefit of those who have not seen or been aboard an LST a short description of the ship might be interesting. In the first place an LST is the largest landing craft the Navy has. It is 324 feet long and has a beam of 30 feet. It is flat-bottomed and keelless. There are two Diesel engines located aft with twin screws which will give the craft a flank speed of 11 knots. A large stern anchor, to be dropped 100 yards before hitting the beach, is attached to a large electric winch which is used to drag the ship off the beach after the landing is made. Two-thirds of the ship from the bridge forward is occupied by the tank deck below and the main deck above both of which are for the purpose of carrying personnel and materiel. The bow doors are electrically operated and are opened before the run on the beach is made. Behind these bow doors are two ramps, the lower for unloading the tank deck and the upper for unloading the main deck.

The sick-bay is just slightly aft amidship on the second deck on the starboard side and is the size of an average clothes closet. For this reason during combat or in hostile waters the wardroom is set up as an operating unit. Instruments and supplies are stored in cabinets along the bulkheads. There are, furthermore, three emergency first-aid stations manned by corpsmen—one in the bow, one aft, and one on the superstructure. The medical officer moves about at random hoping to find himself where he will be most needed.

Ordinarily a group of 12 LSTs carries two medical officers. However, during invasion each LST carries its own medical officer, the surplus being reallocated after the active warfare has gone inland beyond the danger point to the fleet. LSTs carry no x-ray equipment and no dental officer so procedures that must come under these headings must be carried out aboard a larger ship or at some shore installation. My LST, the 997, was attached to the Eighth Amphibious Force at Nisida in the Bay of Naples. This was commonly known as Alligator Hall.

During the days prior to the invasion, we were busy carrying troops and supplies from Bizerte to Ajaccio, Maddelena up to the northern tip of Corsica where we had A. P. T. Squadron based at

Calvi. During this preliminary period the harbors and bays from Bizerte, Sicily, Salerno and Naples to Anzio were becoming so congested with ships that it was almost impossible to turn a row-boat around. None of us at the time knew what it was all about. However, I later received a letter from my wife stating she knew about D-Day long before I did. On D-Day minus 3, officers were given their orders labeled top secret, ultra-ultra secret, etc., which informed those of us of the Medical Department to expect the worst casualties of any invasion up to that date.

On the side of each LST was painted a triangle—some red, some yellow, some blue. These represented the beach upon which they were to land. On D-Day minus 2 we began a moving convoy, an endless stream of ships so thickly packed one could hardly see the water. Those of us in the Bay of Naples were of course joined by convoys that had been waiting elsewhere. The run was uneventful; we had air supremacy at that time and our only danger of air attack was at night.

We arrived off the beach at dawn on D-Day 11 hours minus 3 and dropped the hook six miles off shore. The first line started with the little DEs less than a mile from the shore, then came the DDs, then light cruisers, then heavy cruisers, then all the assortment of landing craft from the little LCVPs up to the LSTs. Behind us lay the battle ships, or BBs, as they are most commonly known. By the way, I might interpose here that the crews of the LSTs were firmly convinced that while underweigh LST stood for large slow target, and while on the beach it stood for large stationary target.

As soon as we arrived, everything with the exception of the landing craft, opened up with all guns aboard. There was one exception to this. The LCTs were equipped with banks of rockets and they were continuously weaving in and out among the other craft throwing group after group of rockets at the shore. Almost directly behind us lay one of the battleships and every time she let go with her 16-inch guns our little LST would reel over as though pushed by a giant hand, the black-out curtains streaming out straight. At HR minus 1 our bombers came over—5,000 of them—and between the bombers and the Navy's guns it looked as though the whole coast of Southern France was going to dissolve into powdery dust. I learned later from one of the pilots that the bombers had begun

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgwick Inn, Greensboro, N. C., March 3d and 4th.

their rendezvous at 2:00 a. m. so you have a fair idea how many bombers participated in this event.

At HR minus 30 min. the little LCVPs made their runs almost on the beach looking for under-water obstacles, mines, etc., and gathering such information as they were able. That there were still a few of the enemy in action was evidenced when our little LCVP came back with several bullet holes through her sides. There were no casualties, however. At HR, the LSTs, the LSIs and LSMs would make a dash to the beach unloading as quickly as possible and pulling back out to leave room for the next load. Our turn came at HR plus 1. Our beach was Yellow Beach and we hit just north of a small town called St. Maxime. It seemed to me somewhat ironical, inasmuch as my wife is named Maxine.

Off the port bow was a large canvas-covered pile looking at a distance like so much cord-wood. It was German dead, in a pile 10 feet high and 40 to 50 feet long. By the time our troops were a mile or so inland our only remaining danger was from snipers, who were all too numerous for our comfort or safety. Overhead swooped and dove the little cub reconnaissance planes, and at this point it may be interesting to point out that tankers had been fitted with a flat steel deck five feet above their normal deck and extending forward from the bridge. They were used as aircraft carriers from the cubs. Of course landing on one was impossible, but I know of only one unsuccessful take-off. In the meantime the troops were carrying and their trucks, jeeps, ambulances, bulldozers, etc., were unloading. At about this same time an LST still out in the water was struck by a flying bomb which penetrated the main deck, went through on to the tank deck, skidded all the way on this and exploded among 50-gallon drums of 100-octane gasoline creating a perfect inferno. The electric system was immediately burned out thereby making it impossible to open the bow doors. There are small escape hatches leading from the tank deck to the main deck, allowing the passage of one medium-size individual at a time. There were 200 army personnel on the tank deck when the flying bomb struck. Of the 200, only six escaped. We could hear them screaming as far away as we were, but there was nothing anyone could do about it.

We finished our unloading and took aboard the first batch of prisoners, and a sorrier looking lot I have never seen. There were a few scraps of very dirty bread in the manhole cover wells which they eagerly snatched and ate. Most of them had diarrhea and none of them had a full uniform. There were Poles, Russians, Italians and a few Germans. We dumped them off at Ajaccio. The bombing and shelling was kept up all day. At

dusk, when our troops were 20 miles inland, a lone German reconnaissance plane appeared and promptly disintegrated under our anti-aircraft fire. From then on it was more or less like a ferry boat riding back and forth from Naples to Southern France, to Ajaccio to Naples. Finally, after six trips, the squadron went back to its normal quota of two medical officers per 12 LSTs and those of us who were superfluous were transferred to other activities.

I was sent to the Naval Air Station at Port Lyautey, French Morocco, 60 miles north of Casa Blanca. Three months later I flew the Atlantic via Bathurst, below Dakar; Belen, Brazil; and San Juan, Puerto Rico, finally arriving at La Guardia Field—guess when—on Thanksgiving eve, 1944.

#### Discussion

DR. J. S. HOLBROOK, Statesville, N. C.: Mr. President, having been a member of the 82nd Airborne Division overseas, I should like to confirm Dr. Bennett's description of the flat-bottomed boats. I came back on one of the flat-bottomed LCIs that he spoke about and there is nothing else like a flat-bottomed boat, I assure you. I also crossed the Channel on D-Day to Normandy in a flat-bottomed boat and can confirm what he said about the action when boats alongside were hit by mines or any other explosive. Unless you have ridden in a flat-bottomed boat in or out of combat, you don't know what they are like.

#### THE EPIDEMIOLOGY OF STREPTOCOCCAL INFECTIONS

(F. F. Schwenker, Baltimore, in *JL-Lancet*, May)

Hemolytic streptococci are divided into at least nine different groups—A through H, and K—on the basis of serological reactions to a carbohydrate fraction of the organism. With few exceptions all streptococci pathogenic to man fall into Group A.

Group A streptococci are further subdivided into at least 40 different types, numbered Types 1, 2, 3, 4, etc. This is done on the basis of a serological reaction against a protein fraction of the organism.

Scarlet fever is practically non-existent between latitudes 20° North and 10° South. On each side of this band the incidence increases rapidly to reach a peak in the colder climates. This same relationship also holds for other types of streptococcal infections.

MASTOIDITIS from scarlet fever, measles and the common cold created all of the chronic suppurative diseases of the ears until recently, but the new crop is almost nil. The development of a chronic suppurative ear disease now indicates almost surely a lack of attention. Proper management is within reach of practically everyone in this country who can get to urban\* medical aid. Thus a very large source of hearing impairment is being removed constantly. Hearing within the range of practical hearing may seem good but may still be impaired, and if this condition remains for a time, spontaneous improvement is unlikely. In chronic ear disease which has healed there may be great deformity and scarring, much loss of drum membrane and ossicles, and yet good hearing.—C. R. Weeth in *Brooklyn Hosp. J.*, April.

\*One wonders what can be done in the big cities for these patients that cannot be done elsewhere.—Editor.

# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### THE DISAPPEARING INDIVIDUAL\*

AND THE LORD GOD planted a garden eastward, in Eden; and there he put the man whom he had formed.

And out of the ground made the Lord God to grow every tree that is pleasant to the sight, and good for food: the tree of life also in the midst of the garden, and the tree of knowledge of good and evil.

And the Lord God took the man, and put him into the garden of Eden to dress it and to keep it.

But of the tree of knowledge of good and evil, thou shalt not eat of it: for in the day that thou eatest thereof thou shalt surely die.

And Adam said, This is now bone of my bones and flesh of my flesh: she shall be called Woman, because she was taken out of Man.

Unto the woman God said, I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children; and thy desire shall be to thy husband, and he shall rule over thee.

Therefore, the Lord God sent him forth from the garden of Eden, to till the ground from whence he was taken.

And Cain talked with Abel his brother: and it came to pass when they were in the field, that Cain rose up against Abel his brother, and slew him.

You have been spoken to from the book of Genesis in words all but six thousand years old. You have been given an account in concise and highly dramatic language of the origin and the environment of the Man and the Woman who occupy primal place on the human family tree. The Man was fashioned by divine omniscience and omnipotence out of material freshly created by God. And out of Man, made in the image of his Creator, Woman was evolved and fabricated by God.

Is it possible for us even to imagine the transcendent beauty and charm and peacefulness of that first garden? Its creation by Divinity was deferred until He had given His horticultural and landscaping genius unrestrained practice in bringing into being the entire cosmos. Then He felt capacitated to make such a garden as He would have the first human parents to dwell in.

\*Remarks by the President, J. K. Hall, M.D., Richmond, Virginia, Annual Meeting National Association of Private Psychiatric Hospitals, Sunday, May 18th, 1947. Hotel Pennsylvania, New York City.

Out of such perfection, can you account for the dreadful tragedies with which those first parents had to deal, both within and without themselves? Almost instantly they disobeyed God; they became untruthful; they exhibited lack of appreciation of their perfect environment.

Their first-born child murdered his brother. Surely his bad behaviour cannot be attributed to bad heredity or to crime-begetting environment. The world all about the two sons was new and fresh and productive and beautiful. And into the care of the first parents had been given the mastery of the earth and its all.

There in the valley of the Euphrates, human adjustment to self, to others and to the environment constituted such a tragic failure that punishment was first made use of as a corrective measure. There criminal law was born; there statutory enactments had their beginning; apprehending officers soon became a necessity.

It is a standing reproach against our interest in the philosophy of history that beginnings are seldom recorded. Such a charge cannot be sustained against the author of the story of creation afforded by the first chapter of The Book. Whoever he was, he wrote untroubled by dubiety and with a forceful pen. I doubt not that the best school of journalism today would be happy to have him in its tutorial chair. How eagerly his front page stories of the disasters of Nature would be read, and his account of human behaviour digressions.

In arresting language, in few words, as if he were an eye-witness, he tells us of that historic busy week in which the universe was brought into being out of nothing, climaxed by the garden and by the coming, fully grown, of Man and of Woman. They and their immediate offspring introduced trouble and tragedy and wretchedness unspeakable into a world that had been perfect.

A dream story, a fantasy, an oriental word-wonder, do you say? Can we account so explicitly for the abs and the subs and the paras with which we deal today in many of the descendants of those parents who once lived in too-brief idyllic serenity in the world's only God-made garden?

Do we of this assemblage of philosophers know of another story, in the world's long and solemn history, so embracing in its scope, so factual in its statements, and so devoid of doubt and of theory? God knows; theory surmises. The world's first story teller retains his popularity; the number of his readers constantly increases. Is there a single treatise on psychiatry now in existence that will be on a library shelf sixty centuries from now?

Man would seem to be doomed to live in discord with self and with others. Only a god prefers solitude. Man can exist comfortably and compatibly neither with his inner self nor with his fellows.

Have we any better understanding of man than his earliest ancestors manifested in the valley of the Euphrates?

How sudden and complete the revolution that expelled the first human family from the only perfect home man has ever known! Have we learned since that distant day how to live where we are, as we are, with those amongst whom we are? The world-wide revolution of today proffers a negative answer.

Do you understand you? Do I understand me? Do we possess the knowledge, the wisdom, the courage, the endurance, the patience and the sympathy to fit us for what society expects of us and for what we should demand of ourselves? All anchors are now lifted; instability is universal; doubt and derision have driven out the search after truth and humility and reverence.

The individual may be disappearing by immersion into the mass. Let us hold high our heads in the determination to be women and men; to be individuals, rather than the unit constituents of a group. Only the individual counts; only the individual is a human being. The group can neither think nor reason nor analyse nor estimate nor reach conclusions. The group can be reached only through an appeal to the emotions. The individual only is potent in possibilities and in history.

Let us not be deceived into believing that quantum is qualis; that many is synonymous with much; that character and intelligence can be conveyed rather than evolved. Let us make an unceasing effort to develop and to ennoble all that is within us as individuals so that we may be able to stand alone, not defiant but not afraid either of what is within or what is without. Let us each conspire with self to inspire self. May our hearts be stoutened against the tendency to become subservient to apparent might with concern about conformity rather than about the sustenance of the best that inheres within each of us. The Emersonian dictum tells us that other men are lenses through which we read our own minds. And the Greek philosopher long ago reminded us that if we would know others we must first know ourselves.

The spacious book of knowledge lies fully open before us. Let us of the National Association of Private Psychiatric Hospitals so live and learn and be, that those entrusted to our care as patients shall not on that account be debarred from the understanding and the agencies that would tend to place their feet in the pathway leading back to restoration of health of body and of spirit.

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THE COMMONEST CAUSES OF HEMATURIA in children are pyelonephritis, glomerulonephritis and manipulative procedures in the genitalia.—R. B. Tumor, in *Jl.-Lancet*, May,

## GENERAL PRACTICE

JAMES L. HAMSLER, M.D., Editor, Mannboro, Va.

### SOME POINTS IN THE DIAGNOSIS OF TUMOUR OF THE CENTRAL NERVOUS SYSTEM

THE TAKING OF HISTORY is difficult and time-consuming, says Beck<sup>1</sup>; but, she goes on, "it pays dividends, even it is possible in a large number of cases to make provisional diagnosis on the history alone and to direct future operations from that base."

Further salient features of the article:

Of tumours affecting the spinal cord, 75 per cent are benign: in the whole realm of surgery there are no better results than those obtained by their removal, provided the diagnosis is made soon enough. The course is commonly chronic and progressive. The stage of involvement of nerve roots (often absent) is marked by pain which is pathognomonic. It may precede other symptoms by months or years: it may be constant or intermittent, persist in a localized area or radiate. It is lancinating, aggravated by coughing, sneezing, lifting or straining, and wakens the patient in the early hours of the morning or compels him to sleep sitting up. The first symptom may be pain in a distant part of the body. It is not at all rare for cervical and thoracic cord growths to begin with pain in one or both legs: back abdominal or pelvic pain may persist for years before objective motor or sensory disturbances appear.

Paraesthesiae are early symptoms, usually beginning on the side opposite to that of the tumour. In a small number of cases of cord tumour, subjective motor disturbances, such as weakness and stiffness, appear before the sensory.

The second stage is marked by beginning compression of the cord. There are no more valuable signs than loss of joint-sense and of appreciation of vibration on the same side of the tumour. The level of the tumour is then suggested by the level of the lowest spinous process at which vibration is felt. Localized tenderness of one or several spines below the tumour is also helpful.

In the early stages loss of power with diminished tendon-jerks or lost cutaneous reflexes may have localizing significance. Muscle-fibrillation occurs fairly frequently both in wasted muscles and in those not so affected. Gradual compression of the pyramidal tract results in well-known reflex changes, in increase of tone and diminution or loss of voluntary power below the level of the growth. In extramedullary tumours, spasticity and weakness spread from the feet upwards; in the intramedullary growths the motor weakness spreads, as

1. Diana J. K. Beck, in *British Medico-Chirurg. Jl.*, Summer, 1946.



does the sensory disturbance, from centre to periphery.

Intracranial tumors are amongst the commonest of diseases of the central nervous system. All intracranial tumours are potentially urgent, no matter how mild their symptoms may be when they first come under observation. Grave symptoms may appear suddenly and are often unpredictable.

An intracranial tumour should be suspected whenever, without apparent cause, a patient suffers repeated headaches, especially in the morning and increasing in frequency and severity. It should be suspected in children with vomiting increasing in severity, and in adults with convulsions.

The headache is often bursting in type, it appears at first in the morning, is irregular and transitory, and gradually becomes a daily occurrence of some hours' duration. Later, it appears at other times and is increased by activities causing a rise of intracranial pressure. Temporary relief may be afforded by vomiting, which bears no constant relation to food.

Early in the course of papilledema, visual acuity is normal. By neglect of ophthalmoscopy tumours are often overlooked until sight is irrevocably damaged.

General epilepsy is the first symptom in 18 per cent of intracranial tumours: it differs in no way from the ordinary epilepsy and is specially common in slow-growth tumours. The onset of generalized convulsive attacks after 20 is highly suggestive of an organic cause; after 30, such is nearly always the cause, and tumour is far and away the most common.

Highly suggestive of a frontal lesion is incontinence of urine in a conscious patient. There are two neighbourhood signs of importance; unilateral or bilateral anosmia (without a nasal cause) and the Foster Kennedy syndrome, in which there is optic atrophy on the side of the tumour and papilledema on the opposite side.

Temporal lobe tumours are marked by visual hallucinations, uncinat fits often accompanied by smacking of the lips, upper quadrant visual loss proceeding to complete hemianopia and weakness of the face on the opposite side.

Pituitary tumours, the first to be clearly defined clinically, must be diagnosed early, not only to save sight, but also because extension beyond the sella results in an operative mortality of 33 per cent.

Most of us need to be reminded frequently that tumours of the brain and spinal cord are not rare, that most of them can be diagnosed early if we recognize the significance of the early symptoms, and that if we do not take warning from these early symptoms and so proceed as to have early

operation done, ours will be the responsibility for much pain which would not have been suffered, and for many lives cut off 30 to 40 years too soon.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### PROSTATITIS AND SEMINAL VESICULITIS

INFECTION of the prostate and seminal vesicles plays a far greater role in the production of chronic urinary tract disease than is generally appreciated. Chronic prostatitis and seminal vesiculitis are a constant threat to good drainage and consequently to renal health. We are now faced with the necessity of breaking down the impression, not only among the physicians but also the patients that the sulfonamides and penicillin are the only treatment of choice. The patient with an infected prostate may be acutely ill, or be totally unaware of the smoldering infection. Chronic prostatic infections may cause physical and mental suffering out of all proportion to the actual extent of the disease.

These so necessary postulates are laid down by Fetter<sup>1</sup> in a valuable article which I am abstracting.

The frequency of chronic prostatic infections is borne out by the large number of cases in the armed forces without evidence of preëxisting gonorrhea. Chronic prostatitis occurs anywhere between the ages of 20 and 55.

It is common to find more than one type of organism in the prostatic secretion. One should never overlook the possibility of tuberculosis in a case showing a persistent urethral discharge resistant to all treatment.

The prostate may be the focus of infection producing metastatic disease such as arthritis, neuritis and iritis; also infected teeth, tonsils, respiratory and intestinal tracts, skin and chronic renal infection, and perianal infections are often responsible for chronic prostatitis. The teeth and sinuses should never be overlooked.

Many cases do not exhibit infected urine. Constipation is possibly a predisposing factor. In acute prostatitis urine is cloudy and is infected. There may or may not be a urethral discharge, but the external urethral meatus is swollen. Urination is frequent, painful and difficult. Prostatic abscess should always be kept in mind, particularly if there is complete retention of urine. Chills and fever, pain in the perineum, or rectum are present in varying degree. Diagnosis is made by very gentle and careful rectal palpation.

In chronic prostatitis and vesiculitis the urinary symptoms predominate — mucoid urethral

1. T. R. Fetter, Philadelphia, in *Penn. Med. J.*, May.

discharge seen in the morning or after a difficult defecation, frequency of urination, thinning, lack of force of the stream, and dribbling afterward. Pain is usually referred to the perineum, urethra, penis, or rectum.

The prostate should be examined routinely when looking for foci of infection. It is surprising how often the prostatitis responds to treatment after the source of infection is eradicated.

Sexual symptoms are not frequent or severe. The voided urine may be normal, contain shreds or be infected. On the first examination one may fail to obtain fluid from the prostate; one should persist, at five-day intervals, until secretion is obtained for study. The prostatic fluid after the first massage may not reveal pus. The prostate may be normal in size and consistency, yet the fluid be heavily loaded with pus; or it may be enlarged, boggy, nodular, with areas of softening and occasionally of tenderness.

Tuberculosis of the prostate causes an irregular, nodular surface.

A small, hard nodule on the presenting surface of the prostate noted by rectal palpation should always excite suspicion of carcinoma.

Prostatic calculi can be recognized on rectal palpation by crepitation within the prostatic substance. Complete calcification of the prostate may occur and confuse the diagnosis with malignancy.

Prostatic abscess may be promptly recognized if the prostate is gently palpated at intervals. It is dangerous to massage an unrecognized early carcinoma. In conjunction with other measures, the sulfonamides and penicillin have shortened the span of treatment.

Acute prostatitis requires bed rest, adequate fluid intake; penicillin; sulfathiazole or sulfadiazine (or a combination of the two), in 1-gram doses every four hours, together with sufficient alkalis. Combinations of the sulfonamides and penicillin are the usual course of therapy. Sulfonamides should rarely be given longer than 14 days. Hot sitz baths, rectal irrigations are of aid. In a few instances a catheter must be used to relieve retention.

Massage of the prostate and seminal vesicles via the rectum is the most important measure in the management of chronic prostatitis and seminal vesiculitis—gently and not more frequently than twice weekly or at five-day intervals. If too vigorous or frequent infection may occur and spread within the prostate and epididymis. As the amount of pus diminishes, the treatments are given less frequently. A period of six weeks to three months is usually required for treatment, then examine the prostate at regular intervals for at least one year.

Massage the prostate and vesicles before the patient voids after which the urine flushes the

prostatic fluid and seminal debris. The patient in the knee-chest position, gloved index finger well lubricated, each vesicle is gently stripped above and on the side of the superior border of the prostate. The finger is then brought down to the prostate and three or four strokes are made over the gland on either side from the superior border downward. The prostatic fluid appearing at meatus is collected on a slide for microscopic examination.

Examine the urethra for any type of obstruction. In case of chronic discharge with numerous shreds in the urine pass only one sound at a treatment and repeat at weekly intervals; begin with a 24 French (or smaller).

The electric pad or hot water bottle to the perineum is helpful. Hot sitz baths and rectal douches are useful if symptoms are increased by local treatment.

Sulfathiazole and sulfadiazine 0.5 or 1 gram doses four times a day for eight or 10 days; repeated if desired after a week.

In many cases there are many types of bacteria. Sulfonamide for 24 hours before and after urethral dilations lessen complications.

Penicillin in chronic prostatitis is of doubtful value. The male sex hormone is invariably administered. It may be helpful in some cases, while in others there does not appear to be any benefit.

These patients should have a nourishing diet, not withholding any special articles of food. High-vitamin formulas are advocated.

Alcoholic beverages may be taken in moderation. Fecal contents should not be allowed to become impacted around the prostate.

The patient with chronic prostatitis must be told that the treatment may be prolonged. His interest and cooperation must be maintained. Very often these patients do tax the patience of the physician.

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## PEDIATRICS

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### PEDIATRIC ALLERGY

A NEW YORK pediatrician<sup>1</sup> makes a valuable presentation of the subject of allergy in the young, and the practical lessons are here presented.

Two phases of importance in pediatric allergy are food allergy and its various manifestations, and infection. Allergy is transmitted according to the laws of Mendelian dominance and the manifestations of food hypersensitivity are seen in early infancy. Its most common form perhaps is in persons with asthma, when ingestion of milk, egg, or wheat is followed by an attack. In cases in which the attack appears 15 minutes to one-half hour following ingestion, we find positive skin reactions

1. Robert Chobot, New York, in *W. Va. Med. J.*, May.

and skin-sensitizing antibodies in the blood stream. In cases in which the interval is one to 24 hours, the skin reaction is negative and circulating antibodies are not found.

It has been observed that 70 per cent whose first attack occurred in the first three years food is a basic factor, and that the second largest number who had their first attack in the first three years were definitely infective cases.

The gastrointestinal allergy of infancy is manifested chiefly by colic, pyloric spasm, and cyclic vomiting. In almost all of these the identification of cause followed by its removal brings a remission of symptoms which occur again only when that food is reintroduced into the diet; next most frequently encountered ascribed to food allergy is infantile eczema.

Successful therapy based purely on skin tests is not to be expected, regardless of whether direct or indirect testing is used.

No food reaction, direct or indirect, can be assumed to have clinical significance, unless the child has been brought into contact with the antigen and so has had precipitated the clinical syndrome you are studying. In other words, the clinical test of contact is the only one by which we may be guided. This does not mean that one should not do skin tests. It does mean that one should not accept positive reactions without further verification.

Positive skin reactions are of far more importance in the child's future asthma than the eczema for which he is consulting the physician. Fully 40 per cent of our asthmatic children have had eczema, and it is for this asthmatic state which *lies ahead* that these skin reactions have real meaning.

As the child grows we have a more severe and intractable condition which frequently starts as a food allergy, but later has grafted upon it bacterial allergy. If there are foci of infection, e.g., in the paranasal sinuses or in the tonsils, penicillin 10,000 units q. 3 h. will give brilliant results in many of these cases, and enable us to solve whatever problems of food allergy there may exist in very short order. Of those cases in which there are no food allergies whatever, not a few respond to penicillin rapidly unless of long standing and having massive foci of infection. These latter cases must have surgical removal of the infected focus.

The treatment of food sensitiveness is largely one of avoidance. Milk-sensitive patients should take evaporated milk or a milk substitute; soy bean preparations are as effective as milk substitutes. Egg sensitivity is treated by avoidance, also cases of wheat and other food sensitivities. No attempt should be made to hyposensitize a child to a food to which he reacts; 98 per cent of children spontaneously lose their food sensitivity by

the time they are five years old, but this sensitivity is apt to be followed in months to years by inhalant sensitization.

Treatment as it concerns the inhalant substances is removal whenever possible. In the case of cat or dog sensitivity it is feasible to give immunizing injections against animal danders, just as we do for the dusts and pollens. In testing with seed preparations, such as cotton seed, kapok and flaxseed, use weak concentrations. Children sensitive to pollens may have their sensitivity limited to the bronchial mucous membrane. Such children receive pollen therapy in order to remain well.

We have no accurate form of skin testing for bacterial hypersensitivity. We arrive at a diagnosis largely by the process of elimination. There is no syndrome, whether it be asthma, urticaria, or a gastrointestinal allergy, that cannot be simulated and produced by bacterial hypersensitivity.

Infections of the upper part of the respiratory tract are the most common causes of asthma in children. An important part of the treatment in these children lies in the early and complete removal of infected tonsils and adenoids. Fully 50 per cent of the children we see in practice and in the clinic, who have had previous tonsillectomies, have recurrences. Once it has been established that the infected foci have been completely removed, then vaccine therapy can be instituted. Autogenous vaccines are preferable, with care to prevent overdosage. In the general treatment of a mild attack the use of iodides, ammonium chloride, and ephedrine by mouth, or epinephrine 1:100 as an oral spray, will be of benefit.

Many of these children who, when first seen may be so ill that one wonders if they are going to draw their next breath, have become adrenalin-fast. Status asthmaticus in the child lasts, as a rule, only two or three days in contrast to its duration in the adult for weeks. X-ray of the chest frequently reveals areas of bronchial pneumonia.

The first step is to evacuate the bowels by the use of enemas and follow this by a saline catharsis to take pressure off the diaphragm. The second step lies in relieving any cyanosis present by the use of oxygen by nasal catheter, or, in a small infant by the use of an oxygen tent.

The use of mustard plasters to the chest is of value if the child has no mustard sensitivity, and the prompt use of penicillin or the sulfonamides is indicated. Codeine, together with aminophyllin in the form of a rectal suppository, is of help. Epinephrine should be used by injection as indicated. Occasionally one sees these children having paroxysms of coughing in which they are unable to raise mucus. Syrup of ipecac results in emesis which brings up large mucous plugs and promptly relieves. Using these measures, Chabot has never seen a child die in status asthmaticus.

## GYNECOLOGY

### MANAGEMENT OF THE MENOPAUSE SYNDROME

HERE are plain directions as to what to do with best promise of relieving these unhappy women.

This Birmingham doctor<sup>1</sup> advises definitely because his mind is clear and he has had a large experience in dealing with this class of patients.

Any of the various emotional upsets may occur, but depressive and anxiety reactions are the most numerous. In a patient with emotional balance, the symptoms of the menopause are either very slight or the patient tolerates them well, for this type of patient rarely presents herself for treatment.

Psychotherapy is the most neglected of the aids. The patient must be assured and reassured time and time again that these symptoms are not dangerous to life and that the patient will cease to have them with treatment and the passage of time. Then when the patient asks, "Are you sure, Doctor?" you must be emphatic when you say "Yes."

Sedation has no more clear-cut indication than in such cases. Phenobarbital is long-acting; dose  $\frac{1}{4}$  to  $\frac{1}{2}$  grain three or four times a day is usually sufficient. If enough is given to control the nervous symptoms many patients cannot stay awake or attend to their usual duties. Bromides are more effective in the control of nervousness without inducing sleepiness, but the dose is cumulative. Sedaphen  $\frac{1}{2}$  to 1 drachm, three or four times daily—a mixture of phenobarbital with a small amount of bromide—is effective and with few side reactions.

Chloral hydrate or paraldehyde will be of value in some cases.

In too many cases the tendency is to stop the sedative before sufficient improvement has taken place.

As to hormonal therapy—first do not use large doses nor over too long a period. The first dose, or doses, should be large enough to check the hot flushes, and this dose persisted in for several weeks, and then gradually lowered.

Unit for unit there is little difference in the various preparations. The injection of oily solutions still seems the choice of modes of administration.

In most cases 10,000 units of estrogenic material stops the flushes, and when they return in four to seven days the dose may be repeated. Have the patient return on the day she first begins to have hot flushes again, or, in case the symptoms are not relieved, to return in four days. It may be necessary to give three or four injections at short-

1. E. H. Sanders, Birmingham, in *Jl. Med. Assn. Ala.*, May,

er intervals until the symptoms abate.

As soon as the symptoms are controlled and the patient feeling better generally, a reduction of about 500 units a week is to be tried; it may be necessary again to increase the dose a little, but the course of dosage should be gradually down. In the average case this regimen will take several months.

## RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M.D., Editor, Charleston, S. C.

### EAR-CANAL INFECTIONS

IN INFECTIONS of the external ear canal the pain is more severe, more constant, than in middle-ear infections. The entire side of the head is in many cases so sensitive that the patient is careful to protect it against all forms of trauma. The pain is worse at night and increased by the direct or indirect application of heat or any type of external pressure.

The foregoing striking paragraph arrested our attention. We read on and found<sup>1</sup> more of value.

Swimming, in any kind of water, ranks as the number-one cause. Second is trauma, most frequently caused by the patient scratching his ear, or, in childhood, by the insertion of irritating foreign bodies. These causes frequently are associated with a primary fungus infection which, in turn, is followed by a secondary infection involving the secretory ducts.

The primary symptom, intense itching, predisposes to trauma.

The cartilaginous external ear canal fits tightly into a bony ring which permits no external swelling, so internal swelling causes a buckling of the cartilage, and is extremely painful. This buckling, when seen early may be incised, which predisposes to secondary infection. This may be followed by an extensive cellulitis of the head and neck and erysipelas.

A source of external ear canal infection is middle-ear and mastoid suppuration.

When this occurs, signs and symptoms are confusing, and should the swelling of the ear canal block the drainage, rapid extension within the mastoid process usually take place and necessitates mastoid exploration and drainage.

Virus infection may originate in the middle ear. Due to the formation of blebs on the drum, this pain is often agonizing. After this bleb formation is completed, the pain subsides. These blebs often extend out along the ear canal. If the drum is examined during the formation of the bleb, and when the pain is intense, it will very likely be misinterpreted as a localized bulging of the drum and a needless paracentesis performed.

1. O. J. Dixon, Kansas City, Mo., in *Jl. Mo. Med. Assn.*, Mar.

This type of external-ear infection is usually self diagnostic. The anxious mother calls to say that her child, who left for school with only a running nose and a slight cold has been sent home, screaming with ear pain. By the time they reach the doctor's office, the pain has ceased. The bleb on the ear drum, which has completed its process of formation, explains the case.

To fungus infections, with or without secondary infections, apply cotton tampons saturated with 2 per cent salicylic acid in 70 per cent alcohol. This causes an intense burning which is relieved by blowing air continuously and forcefully into the canal. This also dries the ear canal. Flexible collodion is applied directly over the entire ear canal and dried by blowing air directly upon it. The ether in the collodion acts as an antiseptic and the remaining film protects the small fissures in the underlying skin, preventing external irritation and diminishing the intense itching. Healing takes place beneath this sterile dressing. This treatment should be repeated daily for one week; it is difficult to reach by one application all of the areas which the fungus and accompanying infection have invaded. After three or four applications, intense itching may recur. This may be relieved by the removal of the cast-like tube of dry collodion. No forceful insertion of an ear speculum; no irrigation; no ointment.

Direct or indirect heat increases the congestion and the pain. When pain is intense apply a cold rubber ice ring about the external ear. Sedatives should be used if the pain is severe. The patient should be advised to nap during the day in an upright position and, if pain indicates, to sleep in a like manner at night.

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## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### FOREWORD

In assuming responsibility for this column the departmental editor hopes that he will have assistance from other surgeons in the Association. Contributions will be most welcome. Original discussions or resumés of current articles will be acceptable.

### DANGERS CONNECTED WITH THE USE OF THE MILLER-ABBOTT TUBE

THE USE of the Miller-Abbott tube is now established as an effective method of suction drainage of the small intestine for the prevention and relief of gaseous distention. Its use is attended by certain dangers which are not generally appreciated. That most of them are preventable warrants their consideration.

The Miller-Abbott tube has a double lumen, one

of which is used for suction drainage of the intestines, the other for the inflation of a rubber balloon which acts as a bolus for the stimulation of peristalsis with resultant propulsion of the tube. Improper inflation of the balloon is the cause of accidents peculiar to the Miller-Abbott tube. These accidents can best be illustrated by citing examples. In a case of the author's, in an attempt to irrigate the drainage lumen, 150 c.c. of water was injected into the balloon and a clamp applied to the tube. This was discovered some hours later. After withdrawing the tube and reinflating the balloon with an equal amount of water, it was found to be a cylinder 8 cms. long and 6 cms. in diameter. This distention of a segment of intestine resulted in a paralytic ileus which was slow in being overcome; a rupture fortunately did not occur. Recently a similar case came to the attention of the author. By mistake a barium mixture was injected into the balloon. As it could not be withdrawn by aspiration, it was necessary to resort to operation for its removal.

Another group of cases have to do primarily with the length of the tube. On one occasion the tube failed to pass the pylorus. It became so entangled in the stomach that its withdrawal through the cardiac orifice was difficult; it was removed through the mouth as it would not pass through the nose. In another instance the end of the tube passed well down the esophagus, circled back, entered the larynx and finally a bronchus in which the balloon ruptured spilling the mercury.

Among other dangers reported are erosion of the esophagus, and intussusception apparently due to overactive stimulation of peristalsis by the balloon bolus.

Where the inflated balloon is not necessary, the single-lumen tube provides better drainage and obviates certain risks. In the use of either tube the utmost care should be exercised. Roentgen control affords the single greatest safeguard against errors in placement.

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## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### EDEMA IN PREGNANCY

IT IS LIKELY that too much dependence is placed on weighing the pregnant patient and taking her blood-pressure. No one questions that by these means the doctor may be warned of impending trouble.

Cooke<sup>1</sup> tells us that during pregnancy a tremendous edema may be wholly insignificant; an almost inappreciable edema may be of great significance.

<sup>1</sup> W. R. Cooke, in *Texas Reports on Biology & Med.*, Spring, 1947.

*The Insignificant Edemas.* — The physiologic edema of pregnancy, generalized and more or less constant, may be evident only as a tightness of the fingers and coarsening of the features. Hydræmia is the only constant factor. Reduction of intake of NaCl is more or less effective in some cases. There is a widespread lack of appreciation of the real meaning of more than average, or excessively rapid, gain in weight during pregnancy. Patients with marked losses of weight may develop a virulent eclampsia; patients with gains of from 60 to 90 pounds may show no evidence whatever of a pathologic process.

Edema from venostasis of the lower extremities is a localized, intermittent edema which is nearly always unequally distributed and decreases after recumbency. Often it may be kept within bounds of comfort by lying down with the legs elevated for 10 minutes or so every hour or two during the day. It may be extreme.

Edema incident to simple hypertension is very inconstant even in severe degrees of hypertension; it is significant only when it results from hypertensive renal or cardiac damage. There are four types of simple hypertension to be taken into account during pregnancy: the familiar benign and malignant essential hypertensions; temporary and transient hypertension of psychoneurotic origin; and an unexplained type which develops during pregnancy and disappears promptly after its termination, without demonstrable immediate or delayed effects. This last type may occur in one pregnancy and not in others, in a given individual.

Edema of apparently allergic origin is not very rare during pregnancy, and is usually transient. In one case the edema (and urticaria) was constant and became increasingly severe as pregnancy progressed, disappearing entirely within a few hours after delivery; intradermal injection of cord blood serum caused a very severe local reaction with transient generalized urticaria and mild edema.

*The Significant Edemas.*—The edema oft accompanying preëclampsia is of complex origin. The initial factor seems to consist of an occlusive terminal endoarteriolitis in the renal glomeruli. The cause has not been identified, although there is considerable evidence suggestive of amin-intoxication as a cause. The production of renin in proportion to the diminution of blood supply to the kidney probably plays a part. With the increasing glomerular and general renal damage, protein leakage and Na- and K-salt and water retention occur. Both of these factors operate to increase the edema. Capillary permeability is increased especially in the cerebral area. Capillary thrombosis is usual, most commonly and markedly in the peritubular venules of the liver, where it leads to necrosis and

progressive reduction of the glycogen reserve capacity.

While edema is ordinarily our earliest and most valuable warning of eclampsia, it is not in itself diagnostic of eclampsia, nor is it a quantitative index to the severity or the rapidity of progress of the toxæmia—indeed, the most highly fatal type of eclampsia is the dry type, in which gross evidence of edema may be entirely lacking. The edema of eclampsia may be lessened very markedly by a salt-free diet; but the toxæmia may be progressive in spite of the misleading reduction of edema. Dehydration and attempts to reduce the edema by increased protein intake are very inconstant in their effects on the reduction of edema and neither is any more effective in the control of eclampsia than the obsolete hyper-hydration and low-protein diets.

In the actual eclampsia (coma-convulsive stage) increased intracranial tension and cerebral edema have been suggested as causative of the central nervous phenomena. There is no constant relationship between the spinal or cisternal pressures and the severity of the eclampsia; nor does reduction of intracranial pressure by tap or by intraduodenal instillations of magnesium sulphate have any dependable effect in controlling the convulsions. As yet, the frequent occurrence of greatly increased edema immediately after delivery and the cessation of convulsions is unexplained.

In spite of our greatly increased knowledge of the physical and physiologic pathology of eclampsia, very little of it as yet applies effectively to the therapy of the disease. Edema can be reduced, but little is accomplished thereby, and one must be on guard against being misled as to the progress of the disease. Mechanical compensation by intravenous glucose for the broken-down glycogen reserve is of great value. We have accomplished a real reduction of mortality only through the use of barbiturates and magnesium sulphate, the latter being far superior to the former—an unexplained phenomenon.

The presence of edema is rather immaterial in the nephritic grávida, since the consensus today is that pregnancy should be terminated in any case of severe or progressive nephritis. This policy has reduced the maternal mortality, had little effect on the fetal mortality, and increased the life expectancy of the mother.

Cardiac edema also has low rank among the many criteria of cardiac incompetency in the pregnant woman. The management of these cases must be based upon bedside judgment.

For the edema incident to varices, management should take into account the elimination of the factors due to pregnancy, after its termination.

## PROCTOLOGY

RUSSELL BUXTON, M.D., *Editor*, Newport News, Va.

### THE CARE OF A COLOSTOMY

DUE TO the increasing incidence of carcinoma of the lower bowel, it is apparent that there will be more and more patients with permanent colostomies. Unhappy is the lot of one of these who is not instructed properly in the care of his or her colostomy. The first handicap to be overcome is the psychological disadvantage under which the patient labors. He is certain that there is always an odor about him. He is continually afraid that he will be embarrassed by the passage of gas or fecal material from the opening. The physician's first duty is to correct these false impressions and to assure the patient that he can live a normal social life.

In order to do this, the patient is advised to confine himself to a low-residue diet and to avoid foods which are prone to form gas in the lower bowel. Large amounts of liquids are forbidden and regular habits must be established. The patient is instructed to use a salt-water irrigation of the colon through the colostomy opening every day or every other day, whichever he finds best suited to his particular needs. This is most conveniently done in the bathtub so that a general bath can follow. Enough solution (one tablespoon of table salt to one quart of water) is used so that it returns clear when expelled. The colostomy is then covered with vaseline gauze and dressed with plain gauze. After a few weeks' education, the patients can take care of themselves and never need feel embarrassed because of their colostomy.

## GYNECOLOGY

ROBERT T. FERGUSON, M.D., *Editor*, Charlotte, N. C.

### THE HISTORY OF VAGINAL HYSTERECTOMY<sup>1</sup>

#### ABSTRACT

THIS HISTORY of vaginal hysterectomy, this supposedly most recent of gynecological operations, takes us back fully one century. Not until the last decade has this operation become one of the accepted surgical procedures, and yet as long as three-fourths of a century ago it was successfully performed by the methods now in vogue and described with an accuracy and attention to detail now rarely found.

Accident and ignorance paved the way; the cutting off of the inverted and prolapsed puerperal uterus, under the supposition of its being a neoplasm was the first step; if this could be so easily accomplished, the prolapsed cancerous uterus

1. G. J. Engelmann, St. Louis, in *Trans. Sou. Surg. & Gynec. Assn.*, 1895.

could certainly be removed, and this was proposed (Wrisberg, 1787; Osiander, 1793), and at length accomplished (Osiander, 1801), by drawing down or artificially prolapsing the organ. The uterus had now been successfully amputated above the seat of the disease; and then, in a favorable case, complete prolapse, it was cut away, together with the appendages (Langenbeck, 1813), leaving but a little of the fundus with its peritoneal covering.

The opposition of the profession, and of a public terrified at an undertaking so bold and new prevailed and the operation was forgotten to be rediscovered in an era better adapted to such incisive procedures.

The cutting off of a prolapsed puerperal uterus by the midwife was recorded in recent centuries and even in antiquity. The midwife still continued her work, and in Siebold's *Lucina* we find the complete description of a case occurring in Switzerland, in which the attendants were surprised by the descent of a large tumor, and as it could not be removed by traction, the article states, "the holdest of the fool women present seized a razor and cut it off;" ice checked the hemorrhage, rest and nature completed the cure, only an incontinence of urine remaining.

Osiander took up this line of thought in 1793, teaching the operation, which he for the first time performed in May, 1801, though he did not publish until his ninth successful case, in 1808.

Sauter, 1822, removed the entire organ in situ without the use of ligatures; the patient was relieved of suffering, and for a short time was able to do her own work, but died six months later, without any evidence of relapse, from indistinct bronchial and intestinal troubles. Sauter operated without speculum, ligature, or pressure-forceps, but knife and scissors were kept close to the uterus in order to avoid large vessels. One small vessel spurting, it was controlled by pressure with fingers; the uterus could not be drawn down, as the polypus-forceps would not hold in the friable tissue of the cancerous cervix, so the organ was pressed down by the hand of an assistant, who also sought to press the intestine upward.

With thorough preparation that faulty and fatal misstep in the progress of gynecological surgery, abdominal hysterectomy, might well have been avoided, had the authors and operators of earlier days received the attention which is due them.

#### NUTRITIONAL SURVEY AT A CHILDREN'S INSTITUTION—INCIDENCE OF AVITAMINOTIC LESIONS AND EFFECTS OF THERAPY

(M. S. Biskind, New York City, and R. R. Williams, Dobbs Ferry, N. Y., in *Amer. J. Dig. Dis.*, Apr.)

At the time this survey was begun, there were 425 boys in the institution. Of these 183 were included in the study; 167 were Caucasian, 16 were Negroes. The duration of residence of this group varied from three weeks to five years.

One-fourth came from self-sufficient families; the remainder were less well favored economically.

Complete therapy in the form of a vitamin-mineral supplement and a fortified vitamin B complex syrup\* derived from liver extract and yeast autolysate, was administered routinely, with minor variations and omissions. This provided a per day average of thiamine 10.5 mgm.; riboflavin 11; pyridoxine 3.25; pantothenic acid 8; niacin amide 70; ascorbic acid 35; choline 4; and vitamin A 4,500 units; vitamin D 640 units; and 8-tocopherol 2 mg.; in addition to the extract derived from 18 Gm. fresh liver, and 3 Gm. autolyzed yeast. The mineral component provided per day calcium 50 mgm., phosphorus 40, iron 15, copper 1.5, iodine 0.1, manganese, magnesium and zinc 1 mg. each.

Examination of 183 boys in a children's institution revealed an unexpectedly high incidence of signs and symptoms of nutritional deficiency. Ninety per cent had glossitis, 67% had gingivitis, 19% had cheilosis and 60% had avitaminotic symptoms related to the nervous system. Routine nutritional therapy with the vitamin B complex, together with ascorbic acid and vitamins A, D and E, of all but a few of this group, during a period of seven months, led to a complete disappearance of the indications of deficiency in most of those affected, and improvement in all but a few if the residual group.

This study supports the view that examination for and adequate treatment of the stigmas of nutritional deficiency should have a high priority in routine medical care.

\*Vi-Syneral Capsules and Poly-B syrup, generously supplied through the courtesy of the U. S. Vitamin Corporation.

## INTERNAL MEDICINE

GEORGE R. WILKINSON, M.D., *Editor*, Greenville, S. C.

### DIAGNOSIS IN CASES OF COARCTATION OF THE AORTA

THE DIAGNOSIS of coarctation of the aorta is not difficult. Its recognition depends on keeping the possibility in mind plus a willingness to carry out the few simple procedures in every case of hypertension. A number of young athletes who had unrecognized coarctation of the aorta have died during or shortly after exertion as the result of this developmental anomaly.

Thus forcefully do two members of the Mayo Staff<sup>1</sup> open discussion of the subject. And they go on in the same vein:

There is no set of symptoms which would lead one to strongly suspect it. Many a patient who has coarctation has no symptoms. The two commonest are dyspnea and headache. The most significant clinical findings in order of the ease of recognition are: no or greatly diminished pulsation in the abdominal aorta and distal arteries; b. p. lower in the leg than in the arm; evidence of collateral arterial circulation over the thorax, over the clavicular areas, and particularly in the scapular and interscapular areas; thrills and bruits; a systolic cardiac murmur p. m. i. along the left border of the midthoracic spinal column; roentgenographic evidences.

The type of hypertension is of no help. The au-

1. E. A. Hines & N. A. Christensen, in *Proc. Staff Meet. Mayo Clinic*, April 2nd.

thors recently observed a man of 42 and a boy of eight years, both of whom had coarctation of the aorta with normal b. p. The diagnosis was made incidentally during the routine roentgenographic examination of the thorax. There may be no roentgenographic changes, or, if so, none which are conspicuous, they may be overlooked unless one is thinking of the possibility at the time of the examination of the roentgenograms.

The ecg. changes are of little diagnostic value.

To make a diagnosis of coarctation of the aorta: Suspect this condition in all cases of hypertension and at least go as far in the examination as to palpate the abdominal aorta and femoral arteries. If these are not entirely normal look for collateral arterial circulation, systolic cardiac murmurs, thrills and bruits over the upper part of the back and roentgenographic evidence of coarctation. Even with this method, 5 per cent of cases will be missed.

Since so many such cases are amenable to the surgical techniques of today we have a great responsibility to make the diagnosis.

#### SYMPHYSIOTOMY

(F. E. Baldrige, Huntsville, Ala., in *Trans. Sou. Surg. & Gynec. Assn.*, 1895)

This operation is one of the oldest in obstetrical surgery. The first recorded such operation of which we have any knowledge is by Jean Claude de la Courvee in 1644; revived in 1768 by Sigault (then a student of medicine) in a monograph submitted to the French Academy. No interest productive of practical results was aroused, and the operation was not done again until Sigault himself did it in 1777. He was followed by Siebold in Germany in 1778, then by various Italian surgeons, who achieved but indifferent success, and were subjected to the criticisms of the entire profession for years after it had been dropped in France.

In this country, it was thought to have been performed first by a Dr. Coggins, of Alabama; he is a pretender whose claims are utterly without foundation. The honor belongs to Dr. Jewett, of Brooklyn, who performed it September 30th, 1892.

Designed, as this operation was, to supplant cesarean section with its great mortality, and that relic of the barbarous ages craniotomy, it bids fair to fulfill expectations as to one, and in a large measure both.

#### DISSOLUTION OF SUBSTANCE OF TEETH BY LEMON JUICE (E. C. Stafne & S. A. Lovestedt, in *Proc. Staff Meet. Mayo Clinic*, March 5th)

Of 50 patients who were using lemon juice as a therapeutic measure and who also showed evidence of dissolution of dental structure, 39 were women and 11 were men. Use of lemon juice was most common among persons who were suffering from rheumatism; others were taking it for constipation, to prevent and relieve colds, occasionally as a tonic. In some instances it was used as part of a reduction diet.

In a few of the cases studied lemon juice had been prescribed by professional persons; in the majority of cases advertisements advocating lemon juice was the inducement.

An adequate amount of vitamin C can be had without resorting to improper use of lemon juice. In view of its harmful effects on the teeth its use as a daily drink in any great concentration should be discouraged.



## SOUTHERN MEDICINE &amp; SURGERY

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As is true of most Medical Journals, all costs of cuts, must be borne by the author.

## THE RAPACIOUS DOCTOR—THE OLD MAN OF THE SEA ON THE BACK OF HONORABLE MEDICINE

"SOME Public Relations Opportunities for Doctors" was the subject of an address by a New York public relations counselor\* to the doctors of Colorado last February.

Mr. Rich, apparently, holds some such rank as a public relations adviser as Roger Babson holds as a financial adviser, and has as few inhibitions.

First he uttered a few platitudes:

Any physician who creates bad public relations for himself contributes to bad public relations for the entire profession; too many physicians do not seem to realize their individual responsibility for good public relations.

The speaker expressed the wish that every physician would confront himself every day with some such check list as the following:

Do I consider my patient's time as important to him as mine is to me, and so plan that he be not kept waiting for an unreasonable period?

Do I make certain that my secretary, or my nurse, and any others who come in contact with my patients are not only competent but also understanding and sympathetic?

Do I have my patients return for subsequent appointments only when necessary? Make only such laboratory tests as I am sure are needed and never perform unnecessary operations?

Do I discuss my fees frankly with my patient before the work is done and do I invite discussion as to his ability to meet those charges?

Do I make any effort to learn of the patient's other current medical, dental and hospital expenses for his family so that my charge is based upon the relation of the entire medical expense to the patient's ability to pay?

It was stated that if a man feels that he has had good medical care, been treated courteously and promptly by the doctor and his office assistants, and—most important of all—has been charged a reasonable fee, he will turn a deaf ear to proposals for government control of medicine.

Further statements of this public relations counselor to the Colorado doctors:

You know which doctors overcharge. You know which doctors over-operate. (And he demands that the other doctors "suspend" the doctors who over-charge and over-operate.)

The employed groups are beginning to prepare black lists of physicians. This means that if you don't police your own profession, the public will. It is then but a short step to government control.

\*Raymond T. Rich, presented before the 12th Annual Midwinter Postgraduate Clinics of the Colorado State Medical Society, Denver, published in the *Rocky Mountain Medical Journal's* May issue.

Somehow or other your prepayment plan must reach down to even the indigent and semi-indigent portions of the population as well as all others.

Organized medicine must prove "that it is out fighting for medical care that the public can afford."

Allowing for usual overstatement, one must agree with much that Mr. Rich says. No one seriously believes that every patient who is mistreated by his doctor will condemn every member of the medical profession; but no one will deny that every such act of mistreatment hurts the cause of the profession with the public.

The implications in his list of questions are justified in too many cases. In the week before this address came before my eyes, I had related to me three specific instances of gross abuses of this nature.

A lady to whom I gave a ride, gave me her name and when I gave mine she asked "What kind of a doctor?" When I responded "a regular, sure-enough doctor," she exclaimed, "I'm glad to hear there's one of that sort left." Then she told me that her husband, not long in the city, had gone to an office-and-hospital-only doctor because of a cough. She had accompanied the patient. When her husband came out he had no prescription. She asked the doctor to please give him something to quiet his cough so she and the patient could get some sleep. The doctor told her he did not give medicine until he found out what was wrong with a patient. She bought a bottle of cough syrup and some Vick's salve on the way home. The patient had been charged \$25.00 at the time, and was sent to five other doctors, each of whom was paid \$5.00. Then the patient was given a diagnosis of bronchitis, and told he had nothing to worry about.

Since that experience, so she said, two of her friends had told her that they could not afford to get medical and hospital care in Charlotte and that they regularly got their medical and hospital care in a smaller city (which she named) some 40 miles from Charlotte.

The family came from Saint Louis. Remember, "I'm from Missouri; you'll have to show me."

A few days later, at a social gathering, a gentleman who has a good income, but certainly could not be accounted wealthy, told me that his wife had lately gone to a diagnostician for "a health check-up," and that the charge was \$60.00. The doctor was the same who finally found out that the patient had bronchitis.

The third case was that of a gentleman who went to another State to visit a son. There he got a cinder in his eye, phoned an ophthalmologist asking "if I come right on to your office can I have it removed right away?", and was told, "yes." Arriving at the office he waited a quarter-hour before

having an opportunity to say a word to anybody other than waiting patients. Then a girl in white took him into another room and told him to "sit there," asked his name, address, etc., and started in to take what the high-priced specialists (not his words, but mine) call "a complete history." My friend expostulated, "Lady, I live nearly a thousand miles from here; I'll never be in this town again; I made arrangements with some one who answered your phone to take a cinder out of my eye, and that's all I want done." The fair one responded with: "This is the routine Dr..... requires in every case;" whereupon the Tar Heel walked right out, found a general practitioner, and in two minutes and for two dollars had his troubles over with.

Not many years ago a surgeon in a town some fifty miles away told me that another surgeon happening to come into his office (which was in his hospital), when a wealthy patient was having treatment there. He suggested that the visiting surgeon go with him up to see the patient. The attending surgeon admitted he was prompted by a desire to show the visiting surgeon what an important patient he had. The denouement? Patient receives bill, "To Professional Services Rendered..... \$1,000.00

This journal has for twenty years cried out against the practice of the so-called ultrascientific doctors of subjecting patients' persons and purses to every test within the capacity of the laboratory force available in the instant case. It is well to note that this expert in the field of public relations has taken note of that great abuse and listed it along with having patients return for unneeded treatments, and performing on them unnecessary surgical operations.

*Home Companion* will be awaited with interest.

There can be no doubt that many of the highly sensational statements as to the derelictions of surgeons are gross exaggerations. On the other hand, it is common knowledge that there is more of truth in such statements than we can contemplate without grave concern.

One can but wonder how much of the clamor for Socialized Medicine has its origin in such combined stupidity and rapacity on the part of a very few of us.

#### PENICILLIN FOR SCARLET FEVER

Eighty-six patients with scarlet fever have been treated<sup>1</sup> with penicillin X, crystalline penicillin G and commercial penicillin.

Penicillin was more effective than antitoxin or symptomatic therapy in the prevention of complications and in reducing the number of carriers and was equally as effective in decreasing toxicity. Antitoxin caused a more rapid decline in t. The t. dropped more rapidly in patients given penicillin than in symptomatically-treated patients.

An additional 50 patients have been treated with 100,000

units of penicillin q. 4 h. orally. The fall in t. and decrease in toxicity were prompt. In none of the patients did there develop a pyogenic complication, and the beta hemolytic streptococcus disappeared during therapy in each instance.

Scarlet fever was successfully treated with penicillin in 116 patients.<sup>2</sup> On the basis of our observations, penicillin is equally as good as convalescent scarlet fever serum, and superior to sulfonamide drugs, as a therapeutic measure for scarlet fever.

The most important advantage to the penicillin-treated patients was that fewer complications followed its use. We believe a thoroughly reliable estimate of penicillin's worth can be determined only by using it against virulent types of scarlet fever.

Until it is proved that penicillin far outweighs in efficiency all other kinds of treatment for scarlet fever, its customary method of administration must be regarded as an obstacle to its use.

1. H. L. Hirsch *et al.*, Washington, in *Jl. A. M. A.*, March 8th.

2. A. L. Hoynes & B. H. Brown, Chicago, in *Jl. A. M. A.*, March 8th.

## Annual Commencement Washington University Baltimore, Md.

\* \* \* \*

The pleasure of your company is respectfully solicited at Concordia Opera House, on Tuesday, March 3d, 1868, at 10 o'clock, A. M.

\* \* \* \*

Valedictorian

Prof. J. P. Logan

President of Graduating Class

N. Gilmer Thomas, Tenn.

\* \* \* \*

Committee of Invitation:

J. P. Payne, Va., Chairman

J. W. Caldwell, Ky.      J. E. Gibbons, Md.

R. V. Cowan, N. C.      J. Turner, N. C.

Committee of Arrangements:

R. M. Reese, Tenn., Chairman

C. M. Payne, N. C.      J. T. Wilhelm, Md.

J. B. Vernon, Ala.      J. W. Shuford, N. C.

The foregoing is a copy of a part of the program of the Commencement exercises in 1868 of Washington University, Baltimore, Maryland. The original was sent to me by the late Mrs. S. W. Gillespie (Maggie Howard White), my half-sister, not long before her death a few years ago at her home in Wyoming.

I am certain that Dr. J. E. King, Dr. M. W. Hill, Dr. J. L. Laxton, of Morganton, and Dr. E. A. Hall, my father, were also members of that graduating medical class of 1868.

I think Dr. J. Turner practised medicine in Catawba County. Dr. R. V. Cowan, of Iredell County, was a cadet at West Point at the beginning of the Civil War, but he could not remain until grad-

uation. He was a Colonel in the Confederate Army. Dr. Laxton lost a leg in a skirmish with Union troops near Ashland, Virginia. But he was a busy family doctor, in spite of his wooden leg, into comparative old age. I was with him at the time of his death. I can remember Dr. C. M. Payne. After practising medicine for a few years, he became a Presbyterian minister, and once he was a visitor in my father's home. Dr. R. L. Payne, Jr., the distinguished surgeon of Norfolk, is the great nephew of the former physician-minister.

Washington University ceased to exist under that name many years ago.

My father and the other students from Iredell had their first and second terms in Medicine at the Medical College of Virginia, in Richmond, in 1865-66—1866-67. The third and last year in Baltimore in 1867-68.

—JAMES K. HALL.

### EARLY CANCER OF THE LARYNX

(K. M. Houser, Philadelphia, in *Delaware State Med. Jl.*, Nov., '46)

Carcinoma of the larynx may exist for months before symptoms become pronounced. In the intrinsic type, vocal changes are almost always the first symptom, occasional huskiness with tendency to clear the throat. Fatigue and smoking intensify these symptoms, so the patient often explains the condition on these grounds. In extrinsic lesions the initial symptoms are usually a sense of throat irritation, the sensation of fullness or a foreign body, soreness and a tendency to aspirate food particles.

Suspect all cases of hoarseness and subject them to careful study to rule out intrinsic laryngeal cancer. If such lesion is found in an early stage, the chances of cure by appropriate surgical measures are as good if not better than the same lesion found in any other locality.

Syphilis and tuberculosis of the larynx must be suspected in cases of chronic hoarseness. Be suspicious of cancer in all cases when vocal rest and other forms of treatment, such as antilutic treatment in lues do not cause objective and symptomatic improvement in several weeks.

Untreated laryngeal carcinoma always ends fatally, the life expectancy being two years.

### ORAL THERAPY OF PRURITUS ANI

(L. G. Bodkin, Brooklyn, in *Amer. Jour. Dig. Dis.*, March)

In a series of 116 cases of pruritus ani Taka-diastase, 5 grains, and diphenylhydantoin (sodium dilantin), 1½ grains, after meals and at btd time, was used in most cases. Neither drug was effective alone. Glutamic acid, with or without hydrochloric acid, was substituted for diphenylhydantoin in 5 cases; used as a supplement in 24 instances. Of 116 cases, there were 6 failures, for which possible explanations could be found; 5 discontinued medication; 12 are still under treatment.

Treatment was aimed at the most likely cause of the condition—a nervous state affecting digestion. Response was prompt in many cases; successful in a large majority; often speeded by the use of Epsom salt twice weekly. Recurrences were noted in 14 cases; they were again relieved in all but one. A careful routine must be followed with attention to diet, laundry and protection of the skin.

## NEWS

### DUKE UNIVERSITY SCHOOL OF MEDICINE

On May 24th and 25th meetings were held at Memorial Hospital, Charlotte, and the North Carolina Orthopedic Hospital, Gastonia, at which trainees in the Orthopedic Training Program at the School and other hospitals read medical papers to members of the orthopedic specialty and the personnel of the training program.

Those who read these papers from Duke are: Louis D. Britt, Ned M. Shutkin, Walter A. Hoyt, Ira H. Rapp, Julian B. Noel, Jack Hughston. Others include F. Payne Lee, John Balues, both of Charlotte Memorial; George Sotirion, George B. Miller and J. B. Carr, all of North Carolina Orthopedic Hospital; Leonard J. Goldner and Ritchie Belzer, Warm Springs Foundation; and Kearns Thompson and N. M. Roland, both of Shiners' Hospital.

This Training Program has been established with the cooperation of the Warm Springs Foundation, Warm Springs, Ga., the North Carolina Orthopedic Hospital, the Shiners' Hospital for Crippled Children, Greenville, S. C., Charlotte Memorial Hospital, and the orthopedic division of the department of surgery at Duke. The training is on a competitive basis and all appointments are for one year. Fellowships are provided by the National Foundation for Infantile Paralysis. Engaged in the training are six first-year Fellows, four second-year Fellows, four third-year Fellows, four fourth-year Resident Fellows and one fifth-year Resident Fellow.

### UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE

Dr. Oscar Swineford, Jr., Professor of Practice of Medicine, addressed the Norfolk County Medical Society on April 21st, on the "Management of Asthma." He also took part in a symposium on "The Management of Hayfever" at the Southwest Allergy Forum in Shreveport, Louisiana, on March 31st.

Dr. Fletcher D. Woodward, Professor of Otolaryngology, has recently returned from St. Louis, where he served on the examining board of the American Board of Otolaryngology. Dr. Woodward also attended the special society meetings there after the Board examinations.

On May 12th, Dr. H. B. Mulholland, Professor of Practice of Medicine, spoke at the second annual meeting sponsored by the Public Health and Safety Committee of the Arlington Chamber of Commerce. Dr. Mulholland spoke on "Virginia's Problem of Health and Medical Care."

### SAMPSON COUNTY (N. C.) DOCTORS ELECT OFFICERS

Dr. J. S. Ayers, Clinton, was elected president of the Sampson County Medical Society in a meeting held June 6th at the home of the retiring president, Dr. Glenn E. Best.

Members of the Duplin County Medical Society were guests at the meeting. Dr. R. A. Ross, of the Obstetrics Department at Duke, was principal speaker of the evening. Other officers elected were Dr. D. M. Royal, Salem, vice-president; and Dr. Glenn C. Newman, Clinton, secretary-treasurer.

### DR. WILLIAM R. BOND NAMED MEDICAL DIRECTOR OF VANPELT AND BROWN

VanPelt and Brown, Pharmaceutical Chemists, of Richmond, has announced the appointment of William R. Bond, M.D., as Medical Director of the company. Dr. Bond holds the degrees of Ph.G. and B.S. in Pharmacy, as well as that of M.D. from the Medical College of Virginia. He has been Professor of Physiology and Assistant Professor of Pharmacology at the same institution. He is now in charge of Endocrine instruction, and serves as Consultant for the Endocrine Clinic there.

Between 1934 and 1938, Dr. Bond was Medical Director of Rare Chemicals, Inc., Nepera Park, N. Y. He then became affiliated with the Medical Research Department of Schering Corporation, Bloomfield, N. J., where he remained until his present appointment.

He is a Fellow of the American Medical Association, and a member of the Southern Medical Association, the American Pharmaceutical Association and a number of other medical and scientific societies.

### MECKLENBURG COUNTY MEDICAL SOCIETY—May 6th, 8 p. m. Mint Museum, Charlotte. Program:

Misleading Manifestations of Otolaryngological Tumors and Infections and Their Inter-Relationship, Dr. V. K. Hart.

Distast Metastases of Renal Neoplasms (report of a case of Pulsating Metastases), Dr. Brodie C. Nalle, Jr.

Dr. Aubrey Hawes, discussant.

Short Informative Talk by Member of Alcoholics Anonymous.

By-laws to be acted upon by society.

DR. CHARLES BUNCH announces to the Medical Profession that he is prepared to do Peritonscopic work in connection with the practice of general surgery.

810-812 Professional Building, Charlotte 2, N. C.

DR. HUBERT ASHLEY ROYSTER, of Raleigh, is convalescing at his home, after an operation at the University of Pennsylvania Hospital, Philadelphia.

DR. E. K. McLEAN announces the association of Dr. FRED R. COCHRANE, JR., in the practice of Diseases of Children, 121 West Seventh Street, Charlotte.

THE NALLE CLINIC, Charlotte, announces that DR. WILLIAM FLETCHER HARRELL, JR., recently of the Army of the United States and lately Resident in Pediatrics at the University of Virginia Hospital, has joined the Clinic Staff in the Department of Pediatrics.

DR. FRANK J. CURRAN, psychiatrist to St. Vincent's Hospital, New York City, is to become a member of the psychiatric staff of the University of Virginia. He will become chief of the recently organized Child Guidance Clinic and his time will be devoted to child psychiatry. Headquarters for the activity have been established and a staff has been organized especially to undertake work with problem children.

DR. LEON T. KENNEDY announces the removal of his offices from 117 West Seventh Street to 1400½ East Morehead Street, Charlotte, N. C. Internal Medicine. By appointment.

DR. C. GRAHAM REID announces the association of DR. CLINTON H. MCKAY in the practice of Internal Medicine at Charlotte.

DR. HORACE H. HODGES announces the opening of his offices for the practice of Internal Medicine and Gastroenterology in association with Dr. MONROE T. GILMOUR, at 117 West Seventh Street, Charlotte.

DR. EDWARD J. WANNAMAKER, of Charlotte, announces the association in the practice of Internal Medicine of DR. WILLIAM HARDING KNEEDLER. Dr. Kneedler is a diplomate of The American Board of Internal Medicine, a Fellow of The American College of Physicians. Until recently he was an Associate in Medicine at Jefferson Medical College, and Consultant in Tropical Medicine at Jefferson Hospital.

## MARRIED

Miss Catherine Tob Beltzhoover of Charleston, W. Va., was married to Dr. William Walker Butzner, Jr., of Fredericksburg on May 10th.

Dr. Byrd S. Leavell, of Charlottesville, brother-in-law of the bridegroom, was best man.

Miss Anne Catherine Gentry, of Richmond, and Dr. Ernest Betts Carpenter, of Newport News, were married May 10th at Trinity Methodist Church in Alexandria.

Dr. James Lamar Henson and Miss Harriet Ann Hall, both of Greensboro, were married on May 10th.

Dr. Lewis H. Boshier, of Richmond, and Miss Blanche Kenney Smith, of Farmville, Virginia, were married June 14th at "Longview," the home of the bride.

Dr. James Brown Zickler, of Nashville, Tennessee, and Miss Bobby Lou Hundley, of Reidsville, were married on June 5th.

Dr. Merritt Woodhull Foster, Jr., of Williamsburg, Va., and Miss Mary Josephine Nolde, of Richmond, were married on May 31st.

Dr. Paul Truman Harrell, of Wake Forest, and Miss Nora Gray Russell, of Warrenton, North Carolina, were married on May 31st.

## DIED

Dr. Ellis David Walker, 84, died May 6th at the home of his daughter, Dr. Miriam W. Beauchamp, in Lynchburg. Dr. Walker received his M.D. from the University of Michigan. He practiced medicine in Ann Arbor, Detroit and Chicago until his retirement, at the age of 76.

Dr. Francis Edward Harrington, 67, former public health commissioner for Minnesota, died May 9th.

Dr. Harrington was health commissioner of Minneapolis from 1920 to 1944 and superintendent of the Minnesota General Hospital from 1937 to 1944. He went to Palm Beach in January because of a heart condition which brought on his death.

A native of Norfolk, Va., Dr. Harrington became interested in public health work through association with Major Walter Reed and Captain James Carroll during their investigations of yellow fever.

Dr. Otis H. Whitlock, 60, was fatally burned in his home at Richmond, Virginia, the evening of May 9th. He was found unconscious with both feet burned almost entirely away.

Dr. Whitlock had been living alone for the past six weeks.

He was a native of Powhatan County, where he practiced his profession for several years after receiving his M.D. from the Medical College in 1913. He had been practicing for the past five years in Richmond.

Dr. Harry Burgwyn Baker, 78, a practicing homeopathic physician of Richmond for more than 45 years, died at his home June 14th.

Dr. Jesse H. Crouch, 60, director of public health for Henrico County, Virginia, died June 15th at a Richmond hospital. Dr. Crouch's death came unexpectedly after he was stricken at his home a few hours before.

Dr. Crouch was graduated from the Medical College of Virginia in 1910 and practiced in Richmond until 1916. He

then moved to Isle of Wight County where he continued his practice.

He later became associated with the State Health Department as health officer for Williamsburg and James City County. Later he took graduate study at Johns Hopkins University where he graduated with a D.P.H. degree.

He returned to Virginia but shortly thereafter left to become associated with the Health Department of Fort Worth, Texas, where he won nation-wide recognition for his work on poliomyelitis.

He later went to Montana as an epidemiologist and during the emergency which followed the flood in West Virginia about 1933 was with the United States Public Health Service.

## WITH OUR ADVERTISERS

*Genealogy of Sex Hormones*

In honor of the 100th Anniversary of the American Medical Association, the Schering Corporation has issued a study of the historical development of the male, female and corpus luteum hormones entitled *Genealogy of Sex Hormones*. This little book records the struggle for knowledge of the hormones over 23 centuries of medical history. The painting, by the American artist Antonio Petrucci, depicts scenes ranging from the studies of Aristotle in the 4th Century B. C. to the development of pure crystalline hormones. A bibliography and general references provide a guide to the history of endocrine research through the ages and a suggested guide for further reading.

The family tree itself was the central feature of the technical exhibit of Schering at the A. M. A. Convention, and aroused great interest among physicians attending. Requests for copies addressed to the Professional Service Division, Schering Corporation, Bloomfield, N. J., are gladly granted.

*Prices of Female Sex Hormone Reduced as Much as 59 Per Cent*

Roche-Organon, Inc., Nutley, N. J., have announced reductions of 30% in the prices of their injectable female sex hormone preparation, Dimenformon Benzoate (alpha-estradiol benzoate) vials and ampuls. At the same time, the company has introduced a new package of Dimenformon Benzoate vials—an *economy package of 6 vials*—which reduces the price of this therapy as much as 59%.

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*Schering Progynon-B Prices Reduced*

A 30 per cent reduction in the price of Progynon-B, Schering's female sex hormone preparation, has been announced by Schering Corporation of Bloomfield and Union, New Jersey. This is the second major price reduction by Schering Corporation in price of hormones in the past few months and is in support of President Truman's campaign for reduction of prices.

## BOOKS

A TEXTBOOK OF MEDICINE, edited by RUSSELL L. CECIL, A.B., M.D., Sc.D., Professor of Clinical Medicine, Cornell University Medical College; Consulting Physician, New York and Veterans' Hospitals; Visiting Physician, Bellevue Hospital, New York City. With assistance of WALSH McDERMOTT, M.D., Associate Professor of Medicine, Cornell University Medical College. Associate Editor for Diseases of the Nervous System: HAROLD G. WOLFF, M.D., Associate Professor of Neurology, Cornell University Medical College. Seventh Edition. 1730 pages, with 244 illustrations. W. B. Saunders Company, Philadelphia and London. 1947. \$10.

Here we have in one volume of reasonable length a textbook of medicine which is a joint work of more than 100 of the foremost clinicians alive today. It would be difficult, even impossible, to fairly pick out any special part for extraordinary praise. It is all excellent. The wonder is how the editor could have induced his contributors to so limit themselves as to space in which to cover the subjects of special interest to themselves, and a second wonder is how they did it so well. For any practitioner who does not have the facilities of a large medical library at his disposal, such a book is indispensable. For the doctor who has such facilities it will prove of daily helpfulness.

DISEASES OF THE CHEST: WITH EMPHASIS ON X-RAY DIAGNOSIS, by ELI H. RUBIN, M.D., F.A.C.P., F.C.C.P., Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital and Country Sanatorium, New York; Visiting Physician in Tuberculosis and Physician-in-Charge, Chest Clinic, Morrisania City Hospital, New York. 685 pages, with 355 illustrations (24 plates in color). W. B. Saunders Company, Philadelphia and London. 1947. \$12.

For more than a quarter-century it has been plain to all who studied the subject that it is by the use of x-rays that most information of value as to the diagnosis of diseases of the lungs is to be elicited. In recent years claim has been made by a good many that it is by the use of these rays that we can obtain information of most value in the diagnosis of heart disease. Certain it is that x-ray examination is of extreme importance in the investigation of all chronic disease conditions within the chest.

This book deals comprehensively with applied anatomy, physiology and roentgenology as essential to the interpretation of symptoms and signs: with the acute and chronic pneumonias, a separate chapter being given to treatment with sulfonamides and antibiotics; with the major aspects of pulmonary tuberculosis and its complications. A chapter is devoted to the various chronic diseases in which the bronchi play an important role. Another treats of affections of the mediastinum, pleura and diaphragm; and the final section deals with the principles of surgical treatment.

An excellent text is supplemented with a great number of excellent illustrations, and an elaborate

biography is included for the use of those who wish to explore further into any subject.

DISEASES OF METABOLISM—Detailed Methods of Diagnosis and Treatment—A Text for the Practitioner, edited by GARFIELD G. DUNCAN, M.D., Director of Medical Division, Pennsylvania Hospital; Clinical Professor of Medicine, Jefferson Medical College, Philadelphia. Second Edition. 1045 pages, with 167 figures. W. B. Saunders Company, Philadelphia and London. 1947. \$12.

This book is made up of the contributions of a score of eminent doctors, each of whom has made a special contribution to one or more of the disorders of metabolism. The introduction to the first edition was made by Banting, the foreword of the present edition is contributed by Banting's associate, C. H. Best. The fundamentals of normal and abnormal metabolism are reviewed and interpreted in the light of most recent knowledge. The gap is bridged between the research worker and the physicians with patients to treat. After a discussion of general metabolism, the metabolism of the different body constituents is discussed in different chapters. Then we have nutritional and metabolic aspects of disorders of the blood, water balance, vitamins and avitaminosis, undernutrition, obesity, gout, hyperinsulinism, mellituria, diabetes insipidus and mellitus, disorders of the thyroid gland, and the final chapter treats of diseases of the kidney.

Every chapter is an authoritative covering of the subject, with the main aim in view of usefulness in the practice of medicine.

SURGICAL PATHOLOGY, by WILLIAM BOYD, M.D., Dipl. Psych., M.R.C.P. Ed., F.R.C.P. Lond., LL.D. Sask., M.D., Oslo, F.R.S.C., Professor of Pathology, The University of Toronto, Canada. Sixth Edition. 858 pages, with 530 illustrations, including 22 color figures. W. B. Saunders Company, Philadelphia and London. 1947. \$10.

Since the appearance of the first edition more than 20 years ago Boyd's Surgical Pathology has been one of the most popular with clinicians, surgical and medical. The reason is not far to seek. It is because the work correlates pathology with clinical medicine and surgery to a greater degree than does perhaps any other work on pathology, and because it is written in a way that does not put one to sleep. The present edition lives up to all the promise of the first, in showing why it is that, as Osler said, "as is our pathology so is our practice."

RADIOLOGY FOR MEDICAL STUDENTS, by FRED JENNER HODGES, M.D., Professor and Chairman Department of Roentgenology, University of Michigan; ISADORE LAMPE, M.D., Associate Professor, Department of Roentgenology, University of Michigan; and JOHN FLOYD HOLT, M.D., Assistant Professor, Department of Roentgenology, University of Michigan. *The Year Book Publishers, Inc.*, 304 S. Dearborn Street, Chicago. 1947. \$6.75.

This book lives up to its claim of being a book for medical students and doctors of medicine who are not specialists in radiology. The introduction briefly orients the reader in the subject of radi-

ology. The text tells how diagnosis is made and treatment applied by means of this agency. No claim is made for the roentgen rays as a magical means of diagnosis or treatment. What the authors say these rays will do, they will do in the vast majority of cases. The work should be in the library of every practicing physician.

**METHODS OF VITAMIN ASSAY:** Prepared and edited by The Association of Vitamin Chemists, Inc. *Inter-science Publishers, Inc.*, 215 Fourth Avenue, New York 3, N. Y. 1947. \$3.50.

A great deal of the possible value of vitamin therapy has failed of achievement because of uncertainty of dosage. This uncertainty of dosage was largely because of inexact means of assay. This little book traces the developments along this line all the way from McCollum. While of most interest to the chemist, it is an account of developments of great practical interest and application to the practice of medicine.

**CORRIGENDUM.**—In the review of the book, "If You Need an Operation," in our issue for May, 1937 was given as the year of publication. The year is 1947. Our regrets.

#### DIENESTROL

ANOTHER SYNTHETIC ESTROGEN OF CLINICAL VALUE  
(S. H. Sikkema and E. L. Sevringhaus, Madison, Wis., in *Amer. Jour. of Med.*, March, 1947)

Observations were made on a group of 21 women outpatients suffering from complaints characteristic of the climacteric syndrome. Only two had had no prior experience with estrogenic therapy. Most had been under observation for variable periods and had used one or more estrogens, natural or synthetic. Success with other estrogens had been usually satisfactory when the dose had been maintained at an adequate level. Three had nausea and emesis when using barely adequate doses of diethylstilbestrol.

The important data relate to only 13 women since eight were unable to report to the clinic regularly. Excellent results were reported by five women with doses ranging from 0.1 to 0.6 mg. daily. Seven patients had good results but relief of symptoms was not complete; doses varied from 0.1 to 0.5 mg. daily in this group. It is likely that some of this latter group would have had excellent results if circumstances had allowed us to follow them after slightly higher doses. Result was unsatisfactory in only one case and this woman preferred to discontinue trial of dienestrol at only 0.3 mg. daily.

In most of these women the menopause began spontaneously. The two women whose climacteric syndromes followed irradiation and who had adequate trial of dienestrol had less complete relief from the treatment than did most of the patients. In both cases there is reason to be-

lieve that the irradiation was not enough to cause complete inactivation of the ovaries, a circumstance which has repeatedly seemed to cause a syndrome difficult to relieve.

Our 21 patients reported no nausea, emesis, nor other unpleasant side reactions from dienestrol in dosage up to 0.5 mg. twice daily, but usually not over 0.5 mg. daily. On the other hand, the use of dienestrol has not been followed by the spontaneous reports of well-being which were made following use of some of the natural estrogens. Based on a small series, we think dienestrol is the most satisfactory synthetic estrogen with which we have had experience.

We suggest that the initial trial dose be 0.2 mg. and that the minimum tablet might well be this size. Similarly, since three of the twelve required 0.5 or 0.6 mg. per day, a 0.5 mg. tablet would be a convenient and probably economical size.

We express our gratitude to Dr. C. W. Sondern, of the White Laboratories, Inc., Newark, N. J., for generous supplies of Dienestrol.

#### SARCOMAS OF THE SOFT PARTS

(A. P. Stout, New York, in *Jl. Mo. Med. Assn.*, May)

The sarcomas of the soft parts form a group which is little understood and often poorly treated. Two important reasons for this are they are rare, and in many cases they do not grow with easily recognized morphologic features. Most of us were taught that there were two varieties of sarcoma, spindle-cell and round-cell; the latter the more malignant. Information about these tumors is still far from perfect.

The term sarcoma here connotes a malignant tumor of purely mesodermal origin, which tends to reproduce supportive, reticulo-endothelial and lymphoblastic tissues.

With the possible exception of some skin tumors, and obvious lipomas, neoplasms of the soft parts should not be attacked without a preliminary biopsy so that the oncologist may know with what he is dealing. Blind attempts at local excision is responsible in large part for the high metastasis and death rate.

The accurate diagnosis of these tumors is so difficult that a needle or punch biopsy is inadequate, and incisional biopsy is mandatory. This should be done through the smallest possible incision and with the exercise of the utmost care to avoid implantation of tumor cells in the wound tract. It is imperative that we make early accurate diagnosis by means of biopsy, followed by sufficiently radical surgical treatment as soon as possible, that aims to cure the disease and not just "shell out" a tumor mass is necessary, if more cures of these malignant destructive neoplasms are to be achieved.

#### SEDIMENTATION RATES MAY BE NORMAL IN ACTIVE TUBERCULOSIS

(T. H. Noehren, Rochester, N. Y., in *Jl. Lab. & Clin. Med.*, May)

A study of sedimentation rates in 1,666 cases of active pulmonary tuberculosis revealed normal sedimentation rates in 20.8, 34.6, or 36.9% of active cases, depending upon the criteria used to determine activity of the disease. This is in agreement with reports from other sources. The sedimentation curve varies roughly, but not uniformly, according to the degree of anatomic involvement by the disease.

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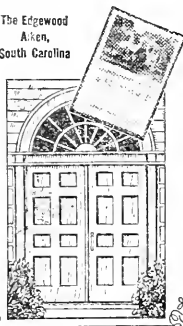
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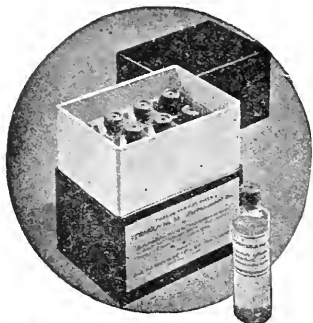
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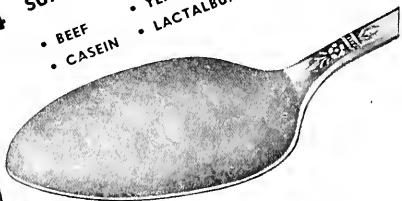
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## Anxiety Reactions\*

### With Emphasis on Management by the General Practitioner

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**T**HE TERM, anxiety reaction, is essentially synonymous with the diagnosis, anxiety neurosis; but it is a little broader in concept and more constructive in connotation. Anxiety neurosis was first described clearly by Hecker in 1893; separated from hysteria by Freud's classical monograph in 1895, and brought to the attention of English-speaking countries by Morton Prince in 1897.

In World War I, anxiety neuroses fell under the general heading of shell shock, and there many of them remained for years to come, even up to the present time. In World War II, such cases (comprising at least 80 per cent of the neuropsychiatric casualties at the front) were called combat exhaustion as long as they remained within the Army echelon. Early in the war, upon evacuation from the Army, they were diagnosed psychoneurosis, anxiety type, but soon the official designation was changed to anxiety reaction. In this way, the Army took the lead in a change of nomenclature that has many advantages. The word neurosis, or psychoneurosis, which had become a stumbling-block for many doctors and laymen, was eliminated and the more hopeful and challenging term reaction was substituted.

Although wars have brought this disorder to us in bold relief, revealing some fundamental causes and therapies, anxiety reactions are with us constantly. It has been estimated that over 50 per cent of all patients coming to doctors have as a

primary or complicating factor an anxiety reaction. Treating only the seldom-found physical disorder is not enough.

Although the classical descriptions and ideas about etiology and therapy of anxiety neuroses were given to us fifty years ago and the two wars are over, it is, nevertheless, timely to discuss anxiety reactions again. In the European Theater of Operations we returned 60 per cent of these patients to duty in Army areas, and so many of the remainder were rehabilitated that less than one out of ten such patients came back to the United States as casualties. Nevertheless, their number, augmented by thousands who broke down without combat, is considerable. Under the prevailing policy whereby private practitioners of medicine are treating veterans, there is a tremendous challenge to the medical profession to meet this problem of N-P. disabilities. If properly handled on an office-treatment basis, long-continued and expensive hospital care can be avoided.

As indicated above the veteran rehabilitation problem is only a part of the picture. For many reasons at this time civilian anxiety reactions are on the increase and are just as much a problem for the general practitioner to meet. We cannot expect to have a psychiatrist in the neighborhood to treat all these patients or even to be available for consultation.

Anxiety is a basic factor in all neuroses; it is usually present in depressions and evidence of it may be present in schizophrenia, especially in the early stages. In fact, anxiety symptoms may mask

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depressions and early schizophrenic reactions. Anxiety symptoms, too, may complicate physical disease. In the Army it was noted frequently that as wounds healed, anxiety increased. Anxiety is the keynote in psychosomatic medicine. It influences digestion, elimination and cardiac and circulatory functions, and it may cause rise in blood-pressure or the appearance of sugar in the urine. What role anxiety plays in patients with essential hypertension, ulcerative colitis, hyperthyroidism, peptic ulcer, asthma, etc., should always be questioned by the practitioner of medicine.

Regardless of the intriguing possibilities of these questions, the scope of this paper must be limited to outspoken anxiety reactions that are the main presenting problems. Symptomatology cannot be dealt with in detail, but it should be recognized that the symptoms are nothing more or less than exaggerations or distortions of the normal physiological accompaniments of fear, worry and anxiety. Cannon and others have given us the experimental physiological basis for the understanding of the symptomatology.

Both mental and physical symptoms are present in acute and chronic form. In the acute attack, the dread may be very intense, amounting at times to a panic state which so frequently is shared by the family. Accompanied by feelings of congestion in the head, palpitation of the heart, suffocative feelings or acute gastric symptoms, there is a fear of impending insanity, death or apoplexy. The particular fear depends partly on the location of the major symptoms and partly on the patient's experience in life with regard to what has happened in like manner to others among relatives, friends or neighbors. The thought processes may be hurried or agitated or it may seem that the mind becomes a blank. The feeling of losing control of oneself is very frightening.

There is great increase in the heart's action with marked palpitation, and even irregularity; it may seem temporarily to stop. Anginal pain usually accompanies the heart disturbances. Nausea and vomiting may occur and frequently there is abdominal distention resulting in acute distress. Diarrhea is sometimes present. Respiratory symptoms are sometimes prominent, particularly suffocative feelings and the inability to draw a deep enough breath. Dryness of mouth and throat, coldness and numbness of extremities, tremor and sweating are usually complained of.

Not all of the above symptoms may be present in one attack and the picture may change from time to time. In some, the head symptoms with fear of insanity may predominate. In others, the cardiac and circulatory manifestations with fear of sudden death or a stroke may be outstanding. In World War II, for some reason gastroenterology symptoms were much more frequent in this condi-

tion than the cardiac symptomatology which was so prevalent in World War I.

The chronic symptoms continuing between the acute exacerbations are of the same order. A large variety of peculiar head symptoms and inability to concentrate due to the constantly obtruding anxiety keep up the suspicion of loss of mental faculties. There is a chronic apprehensive expectation or free-floating anxiety that becomes attached to one idea after another. Heart palpitations spring up unexpectedly. The periodic drawing of deep sighing breaths that don't "hit bottom" is a common experience and may lead to real pain from overexerted intercostal muscles. Anorexia may lead to loss of weight and malnutrition. Of course, anxiety produces insomnia and this in turn augments the symptoms, especially the fear of losing the mind if sleep does not come.

As to the cause, it is recognized that anxiety is a natural emotional reaction when life is threatened or even when a reasonable amount of security is lacking. No two persons are constituted the same and so there is wide variety in the experiencing of anxiety from the standpoint of stimulation, inner resonance of feeling and the physiological and psychological responses. This variation depends on innate constitution and life experiences. Certainly there are some persons who can be called anxious psychopaths because of a life-long history indicating a fundamental temperament characterized by anxiety. On the other hand, as we saw in the war, almost anyone can develop an anxiety reaction if the strain is great enough.

Freud has placed the cause for this condition almost entirely in the sexual field. In fact, he stated that no anxiety neurosis will be found in a person whose sexual desires are being fully satisfied. His postulation was that under certain circumstances sexual excitements arise that cannot lead to full gratification or even a conscious desire for such and being deflected from their aim they manifest themselves as morbid anxiety with its physical accompaniments. After all, the physical manifestations of sexual tension are not very different from those of anxiety. In agreement with Freud, it can be admitted that in anxiety states arising in civilian life sexual frustration is frequently an important factor and sometimes the fundamental etiology. The overarduous embraces of betrothed couples during long engagements; the practice of harmful methods of contraception, particularly coitus interruptus or the sudden cessation of sexual gratification are a few of the situations often found. More important in women patients is the unconscious inhibition of sexual desire due to early training, instilled attitudes and experiences.

Where Freud's theory broke down was in the anxiety reactions of combat soldiers. Surely the frustration of the race preservation (sexual) im-

pulse was not anywhere near as important as the stirring up of the individual self-preservation impulse. Young men are brought up to think of soldiers as brave, fearless people and in service ranks the show of any anxiety or fear is sternly frowned upon. The man's ideals or, in other words, his super-ego, will not allow him to be aware of this emotion. It must be repressed and he cannot recognize the true cause of his palpitation, tremor, headache or gastrointestinal disturbances. The fear of being afraid was often a major problem.

The analogy of this situation in the anxiety reactions of civilian women is more or less obvious. Even today girls are being brought up with the idea that a lady is somehow more or less devoid of sexual desires. The super-ego will not permit full abandonment to sensual pleasures. They cannot recognize the true cause of their palpitations, shortness of breath, inner tensions or abdominal distentions.

Going beyond Freud's theories, it is my contention that usually the sexual frustration is only a part of a much broader background of cause, namely, emotional immaturity. So many of our civilian patients have grown up physically and intellectually but are still at a retarded stage in social-emotional maturity. Either they haven't had enough security in their developing years or they have had too much so that they cannot stand on their own two feet and face the world with confidence. More often it is a matter of too much protection; the apron strings have not been untied or the silver cord has not been severed although the patient may be far removed geographically from the parental roof. From this point of view it becomes evident that sexual maladjustment is only a part of the more general immaturity.

Treatment starts the minute the patient enters the doctor's office or perhaps before this when he called for an appointment. The initial rapport and the confidence established have much to do with the success of treatment. It is essential that the doctor give the patient sufficient time for a recital of symptomatology. An occasional leading question about the peculiarities of certain symptoms gives the patient a feeling that the doctor knows something about such conditions. For example, if a patient says he is short of breath the doctor may ask: "Do you take deep breaths that don't satisfy or 'hit bottom' until you have tried several times?" So frequently this aptly describes the patient's condition that he is pleased to find some one who knows about these things. The same may be done with heart symptoms or head sensations without fear of suggesting new symptoms to the patient.

It is hardly necessary to state that thorough physical examinations and laboratory x-ray and other studies should be done. The routine labor-

atory tests, the basal metabolic rate, the electrocardiogram and the necessary x-ray studies help in the reassurance of the patient and add to the doctor's own assurance in his work with the patient.

A detailed past and family history is necessary for a picture of the personality, for factors related to emotional maturity and for possible emotional experiences which must be reviewed in detail.

At the end of the first interview or quite early in treatment efforts must be started to give the patient a clear and convincing explanation of the emotional basis for the symptoms. Frequently this is difficult and slow work and is subject to considerable misunderstanding. The majority of laymen and sometimes a doctor have the fixed viewpoint that if a basis for symptoms cannot be found in pathology of the internal organs then it must be all imagination. To tell such patients after exhaustive physical studies that there is nothing wrong and to go home and forget it, only drives them on to quacks or faith cures. These symptoms are real; the heart does pound; there is gas in the intestines; the extremities are cold and wet; insomnia is present and the weight loss due to anorexia can be measured on the scales.

Explanation, using commonplace examples as a starting point, is suggested. There is the rapid heart, perspiration and dryness of mouth requiring a pitcher of water for the public speaker. There is the nausea and vomiting at sight of blood for the uninitiated. There is the constipated worrier, the sleepless overactive child who can't relax, the palpitations of the lover, the tremors of the soldier, and the laboratory experiments on the cat frightened by a barking dog—only a few of the illustrations that may make the issue more clear for the patient. An occasional personal observation such as reactions to speaking over the radio may share the personal experience.

This problem of explaining the emotional origin of symptoms is fraught with resistances on the part of the patient. Although it is face-saving for the patient, he relapses time and again to the interpretation that his symptoms must be organic or imaginary. Throughout all of this, efforts must be made to get the patient to discuss freely his personal problems. Psychic trauma, sexual experiences, and above all the progression toward emotional maturity must be ventilated as far as possible. The essence of the psychotherapy is the assistance of the patient to gradually mature in the social-emotional sphere and this may take months or years.

Aside from these psychological and emotional approaches, there is always the hope that we medical men may find a pathological basis or a "streptomycin" treatment for these anxiety reactions. We won't find a pathological basis except in very

rare instances, but we must use the drugs at hand to allay acute and chronic symptoms. We can't send such patients away from the initial interview without a prescription in hand. Knowing full well the suggestive value of medication, we know too that a half-grain of phenobarbital three times a day will allay nervous tension. Other similar drugs may be used and the patient wants something to abort an acute attack. Bromides, controlled with respect to their cumulative and toxic effect, are still valuable and, combined with *nux vomica* and elixir of lactated pepsin, form an efficacious nerve tonic that has definite physiological as well as suggestive value. Other drugs are constantly being tried out and some day we shall have better agents that will relieve the acute anxiety attack, but still this will be only symptomatic treatment. Combating insomnia with a combination of quick- and long-acting sedatives (tuinal) is in order without much fear of habit formation.

The more drastic therapies, such as prefrontal lobotomy and insulin, metrazol or electric shock therapy, are not in order for the anxiety reactions of which we are speaking. However, there are some definite medical or physical approaches in treatment that are applicable to resistant or neglected cases, especially in cases in which anorexia and loss of weight are marked. Time will permit only a discussion of what we call combined sedation and modified insulin therapy.

The sedation part consists of sufficiently large enough doses of sodium amytal, nembutal or tuinal to produce relaxation and sleep throughout the night. In the morning additional sedation in the form of phenobarbital, grains one and one-half, is given at seven or eight o'clock to insure further relaxation and the prevention of convulsive attacks in the following insulin treatment. One-half hour after the a. m. phenobarbital, twenty units of regular insulin is given on an empty stomach. Breakfast is withheld until 11 a. m. and the fast is terminated by sweetened orange juice and a hearty breakfast. On succeeding days the dosage of insulin is increased ten units per day until reactions just short of insulin shock are obtained. The usual maximum dosage of eighty to one hundred units is reached in seven to ten days, but in some instances the dosage must be further increased. At the present time, it is not considered necessary to put the patient in a state of insulin shock, but if this does occur it can be corrected by intravenous glucose. It is to be admitted that some patients derive maximum benefit only when shock episodes occur, but many others improve without carrying the hyperinsulinism so far.

Usually on the second or third day of such treatment there is a great increase of appetite for breakfast which adds a zest for life and an antici-

pation for gain in weight and health. Frequently, the period of hyperinsulinism or hypoglycemia during the morning hours has a sedative effect, but this is not always true. Restlessness and fear of loss of control are sometimes factors that must be controlled by additional sedation. After the patient has been brought out of the hypoglycemic state by breakfast he may be given an opportunity for further relaxation from 11 a. m. to 1 or 2 p. m. but the afternoon should be filled with normal activities and a time out of bed with some physical exercise.

Our experiences in the Army as well as in civilian life have shown that in some way such a regimen of treatment is beneficial to anxiety reactions as well as to depressions with anxiety components. Of course, with this it is necessary to carry on the psychotherapy that helps the patient digest emotional traumata and go on toward emotional maturity. Not infrequently during the morning hours of this treatment the patient spontaneously abreacts or relives important episodes that are both causative and curative.

Just why this insulin sub-shock therapy acts as it does is still an open question. It is theoretically possible that it may stimulate the sympathetico-adrenal mechanism at the hypothalamic level, thus restoring autonomic balance, restoring homeostasis and probably influencing the cortex via the hypothalamus. Signs of parasympathetic excitation are present during treatment. This is the suggested mechanism of Hohman and others, but regardless of this the assistance given to the patient to gain a more mature emotional perspective is paramount.

The mention of abreactive phenomena that occur under insulin and sedation calls attention to the fact that in these anxiety states a hypnotic state produced by pentothal, sodium amytal, ether or even hypnosis itself is efficacious in uncovering hidden conflicts or experiences and in relieving or controlling symptoms by suggestion. In this connection it is held that the hypersuggestive state as produced by medicine is more in keeping with the doctor's role than the mysterious and little-accepted procedures of straight hypnotism. Anyway, these very special techniques are not for the general practitioner of medicine.

In summary, it can be stated that anxiety reactions are a challenge to every practitioner of medicine and that he must meet this challenge if he is to fulfil his function. It is hoped that some suggestions have been given that are helpful to the general practitioner in meeting the problems of at least one-third of his patients. Regardless of his or the patient's concern about physical wellbeing, the essential problem in these cases is that of helping the patient to attain a mature emotional adjustment.

### Discussion

DR. FREDERICK R. TAYLOR, High Point, N. C.: I have been much interested in this subject practically all my professional life. I try to teach our students at Bowman Gray that every diagnosis should be a three-fold one. We should not speak of treating heart disease, kidney disease or treating any other disease, but speak of treating human beings with disease and that involves this two-fold question in every diagnosis—what kind of disease does the patient have and what kind of patient does the disease have? You can have two people with the same physical and financial condition, both with a leg broken, say. One will say, "I have got a broken leg and will be up in a few weeks." All he is suffering from is a broken leg. Another man will say, "I am undone; I will be no good the rest of my life." That man is suffering from something far worse than a broken leg—a broken spirit. If we don't deal with both breaks, we are not doing our duty as physicians.

We should have a clinical diagnosis. What kind of disease does the patient have and what kind of patient does the disease have? Also we need a public health diagnosis, such as "needs typhoid vaccine," etc. Public health men are attending to our work because we have consistently refused to attend to the job ourselves.

One other thing—it grieves me to death to hear about imaginary symptoms. I do not believe imaginary symptoms exist—except on the part of a great actress—not on the part of a sick person. No one who comes to a doctor has imaginary symptoms. As Ross pointed out long ago, if I say I am suffering from a headache, I am either telling the truth or I am telling a lie—I am not imagining that I have a headache. Here is where imagination comes in—I may have a headache as a matter of fact—but I may think it due to brain tumor when no tumor is there, and worrying over an imaginary brain tumor may make me sicker than the headache. I point out to patients with anxiety reactions that they can't expect me to discuss imaginary symptoms with them. A purely functional thing may be based on emotion, but be none the less real. Symptoms are often based on emotions. We have got to realize they are genuine.

I think Dr. Thompson has given a mighty good piece of advice in that paper. I want to ask him one question. I agree with him that psychoanalysis is a specialist's job. I would like for him to say a few words about hypnosis in closing, and particularly about the question of how much danger there is in the hands of a real expert of achieving the very thing we are trying to avoid—a great dependency on someone else and less in one's self, because our purpose is to make the patient go under his own steam.

DR. JAMES WINSTON WATTS, Washington: I enjoyed Dr. Thompson's paper, and would like to ask him about a particular group of anxiety reactions. Yesterday I talked about the use of prefrontal lobotomy in the treatment of pain. That, of course, is radical and indicated only in extreme cases. There are many patients with back pain who constitute a great problem to the general practitioner, the orthopedist, and the neurosurgeon, and they are one of the most difficult problems which the Army and Navy have to deal with. I have performed a prefrontal lobotomy in several psychoneurotics whose chief complaint was back pain. Although the pain continued, the patients who had been disabled prior to operation were able to work in spite of pain, and we have followed one of these patients now for ten years. It seems to me that if we knew how to deal with these patients psychologically during the stage when the pain has been present for a relatively short time, we ought to be able to avoid the development of some of the severe anxiety reactions. Dr. Thompson gave some excellent illustrations on the management of anxiety reac-

tions in battle and in civilian life. I should like to ask him how he would manage or avoid the development of the anxiety reactions associated with low-back pain.

DR. THOMPSON (closing): Concerning hypnotism, I confess that I am not a hypnotist and probably I am prejudiced thereby. I know several psychiatrists who are expert in this field. One N. P. consultant in the Pacific area used it with great success during combat. It is my belief, though, that we are playing the more dignified doctor's role by producing the hypersuggestive state with medicine rather than with hypnotism, which to the patient means some occult power like crystal-gazing.

About the intractable pain and backache, such symptoms may be missed with numerous other symptoms of anxiety reactions. Where they are the presenting or only symptoms, it is more likely to be a hysterical manifestation, providing an organic basis has been ruled out. People may have backache because they don't want to put the back into their work.

In my opinion, prefrontal lobotomy is not indicated in the anxiety conditions I have described. There are other neuroses such as those with intractable pain as mentioned by Dr. Watts and especially the obsessive-compulsive states of long duration where it is definitely indicated. Certainly I would try other methods for a long, long time in anxiety conditions before resorting to neurosurgical procedures.

### SODIUM SUCCINATE ON BARBITURATE DEPRESSION IN MAN

(R. H. Barrett, Hanover, N. H., in *Anal. & Analg.*, May-June)

The author has no doubt of the effectiveness of sodium succinate as an analeptic in man. Dosage is not fixed; it should be given intravenously as indicated by depth of depression. Doses to 30 grams, and possibly more, of the hydrated salt of sodium succinate may be given (without detriment) over a 15-minute period, to adult humans in barbiturate depression. Sixty grams, and probably more, may be given over a two-hour period. (Acute pulmonary edema has developed in animals, apparently from too rapid injection of this concentrated salt. Neither signs nor symptoms of this complication were observed in man.) Apparently sodium succinate may be metabolized or destroyed very rapidly in the human body; therefore, in cases of barbiturate poisoning, 30-per cent solution of the salt should be used for the initial dose, in a sufficiently large quantity to assure recovery. A 10-per cent solution may be used if the more concentrated solution seems neither necessary nor desirable.

It would appear that, on the basis of safety and effectiveness, sodium succinate is a better agent for the treatment of barbiturate poisoning than the convulsant drugs

### TREATMENT OF POISON IVY DERMATITIS

(F. G. Witherspoon, in *Jl. Tenn. Med. Assn.*, 40:1-2, 1947)

Localized poison ivy lesions are quickly soothed by a greaseless non-staining sodium perborate ointment. Treatment does not interrupt the patient's usual activities. Vesicular fluid is absorbed in three or four days and the dermatitis cured within a week.

The ointment compounded of emulsion base, with 1% phenol or menthol and 10% sodium perborate, is applied to the affected areas every two hours. Absorption of the vesicular fluid is usual within three or four days.

When sodium perborate is moistened by perspiration, oxygen is gradually released and the ivy resins on the skin are detoxified. The salve gradually loses potency and must be discarded in five to seven days.

If bullae are large or lesions are acute or widespread, ice bags are alternated with compresses of 1% sodium perborate for a day or two before the cream is used.

In 10% of cases the ointment is ineffective and the best results are obtained from frequent use of compresses of potassium permanganate 1:9,000.

# Insurability of Diabetics\*

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**G**LYCOSURIA is a rather common condition. It is found on routine examinations for insurance in about 3 per cent of applicants, according to our experience. Blotner<sup>1</sup> reports an incidence of 2 per cent in 70,000 selectees examined for military service and estimated that 1 per cent of all selectees had true diabetes.

## NON-DIABETIC AND BORDERLINE GLYCOSURIA

In 1917 a medical student with glycosuria applied to the company with which I was associated for a Twenty-Pay Life policy to be used as collateral to a loan to enable him to complete his medical course. At that time it was customary for companies to refuse life insurance to persons with glycosuria. Being recently out of school myself, and having used an insurance policy for the same purpose, I felt impelled to give him every possible consideration. The case was thoroughly worked up and we were able to show that the glycosuria was due to a low renal threshold and not due to diabetes. Contrary to custom, the policy was issued, another like it was issued to him a year later, and larger amounts later on. The applicant is still living and for thirty years has remained in good health, carrying on a large practice. That was the first of a group of some thousands of persons with glycosuria to whom we have issued life insurance.

Appraisal of glycosuria is based upon the results of the blood sugar tolerance test, the frequency of glycosuria, and the average sugar content of the urine over a three-year period if records that far back are available. The mortality increase varies directly with the frequency of glycosuria, the average sugar content of the urine, and the height of the blood sugar curve with the tolerance test. Particular significance is attached to the length of time required for the curve to return to the fasting level.

Based on our own experience, combined with that of other companies, about ten years ago, a chart incorporating these factors was designed to be used in determining the effect of glycosuria on mortality. One of these charts is completed on each case showing glycosuria. It is convenient to use in appraising these risks and the results have been satisfactory. (See Fig. 1.)

The blood sugar tolerance test is conducted as follows: A five-hour fasting blood sugar determi-

nation is made and the patient is then given 75 grams of glucose. After the first, second and third hours blood and urine samples are taken and the sugar content of each determined. The results are plotted on the chart for the determination of the expected mortality for an individual with that specific sugar impairment. A blood sugar curve falling below 140 mgs., 125 mgs., and 110 mgs., for the one-, two- and three-hour intervals following the administration of the glucose is in a group most favorable and is arbitrarily classified on the chart as Group I. A blood sugar curve falling largely above the upper limit of Group I, but below 290 mgs., 170 mgs. and 120 mgs., for the one-, two- and three-hour intervals after the glucose is classified as Group II, which carries a somewhat higher mortality rating than the preceding group. The group above Group II, yet largely below 290 mgs., 180 mgs., and 130 mgs., for the one-, two- and three-hour intervals is classified as Group III, which carries the highest mortality rating. Those with a blood sugar curve above Group III are considered definitely diabetic. By correlating on the mortality chart the three variables, the average sugar content of the urine, the frequency of the glycosuria, and the group to which the blood sugar tolerance curve belongs, one determines the expected mortality rating for that specific sugar impairment. When glycosuria is present, overweight, marked underweight, pronounced recent gain or loss of weight, and diabetes in the family history are unfavorable. All other factors which determine insurability in any case are also taken into consideration when arriving at the final assessment of the risk. About two-thirds of those showing glycosuria have been regarded as non-diabetic or borderline and have been insured, some at standard rates and others at substandard. About one-third have been regarded as diabetic and in years past have been declined.

## DIABETES

A satisfactory mortality experience with those groups insured encouraged us to begin experiments early in 1945 with insuring carefully selected cases of frank diabetes. In recent months a few other companies in this country have begun similar experiments.

It is desirable that diabetics be offered insurance if possible, because they make up an important segment of our population. There are at least 800,000 diabetics in the United States today.

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgfield Inn, Greensboro, N. C., March 3d and 4th.

Insuring diabetics is an experiment. The course is uncharted and we must proceed with caution. Statements from the applicant and his attending physician regarding the duration of the disease; length of time under control, diet, amount of insulin required, and whether or not there is evidence of gallbladder disease or circulatory disease are required in each case. Great importance is attached to the patient's temperament and his faithfulness

Rating solely on account of glycosuria

in following the regimen prescribed by his physician. Up to now, more applicants have failed to qualify on account of inadequate medical supervision than for any other single cause. Undoubtedly, the average diabetic needs to be better educated and more closely supervised. This is true of cases submitted not only from the South but all over the country.

The type preferred is the individual who keeps close check on his condition, follows his physician's advice, is steady and dependable in personal affairs, has no unusual domestic or business worries, uses little or no alcohol, and is financially able to maintain proper treatment.

Cases usually postponed, rated higher than average, or declined are those:

Under observation or treatment by a physician for less than two years.

Taking more than 50 units of insulin daily or showing more than a constant trace of sugar.

With blood pressure exceeding 140/90 and those with other significant impairments.

Under age 15 and those over age 60.

A diabetic meeting the requirements is generally issued insurance on one of the higher premium plans, subject to an extra rating. This procedure has been followed for over two years, and thus far no deaths have occurred, but exposure is too short and the cases too few to judge the results. At the best, diabetics are hazardous risks; they are by no means standard, but our meager experience indicates that they are insurable on some basis.

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#### PERNICIOUS ANEMIA AND SUSCEPTIBILITY TO GASTRIC NEOPLASMS

(H. S. Kaplan, New Haven, & L. G. Rigler, Minneapolis, in *Jl. Lab. & Clin. Med.*, June)

Statistical analyses reveal that pernicious anemia and carcinoma of the stomach develop in the same individuals more often than would be expected on the basis of chance alone and must, therefore, be etiologically related. The evidence pertaining to the nature of this relationship is still inconclusive, but it suggests that the two diseases are probably linked indirectly through the medium of some common factor. Among the possible factors to be considered are hereditary or constitutional tendencies, achlorhydria, gastritis, and liver therapy.

In contrast to the paucity of gastric tumors discovered in nonselective mass surveys, serial gastric examination of individuals with pernicious anemia has yielded a very high incidence of benign and malignant epithelial tumors of the stomach. It is suggested that a search for other conditions

etiologically related to or associated with gastric cancer is a necessary prerequisite to the establishment of practical, selective mass surveys for the early detection of neoplasms of the stomach.

**ELECTROCARDIOGRAPHIC PROGNOSIS.**—In this series of 20 cases, 11 were men and nine were women. Of this number, four men and seven women are dead, and the remaining seven men (35%) and two women (10%), are living. The abnormalities in the electrocardiograms in this series, whether of slight or great changes, were of little prognostic value. There were no clinical signs nor symptoms that made it possible to predict the immediate or future outcome of the patient. The prognosis, therefore, should always be hopeful but guarded.—*Middleton*.

#### ATOMIC BOMB SURFACE BURNS

(J. S. P. Beck & W. A. Meissner, in *Jl. Indiana Med. Assn.*, June)

Among the prisoners of war rescued at Nagasaki were nine Javanese who had received surface burns as a result of the activated atomic bomb over that City August 9th, 1945. They came under our observation 35 days after the bombing and were treated over a period of two weeks. Their lesions developed and progressed in the manner of ordinary sunburns.

Body surfaces receiving the rays at right angles were more deeply burned than those receiving them obliquely.

The skin lesions of the nine cases had the appearance of ordinary third- and second-degree thermal burns without significant ulceration and scarring. A number of areas were encrusted with dried serous exudate which could be lifted off in flakes. A few blebs were still present. Healing appeared entirely satisfactory. Treatment had been consistent with that ordinarily given for thermal burns.

The parts of the body covered by wearing apparel were generally protected. Long, thick hair protected the scalp, but short hair did not protect the temples or less hairy portions of the face.

There was no hematological evidence of injury to the blood-forming tissues in these patients.

#### A SIMPLE AND RELIABLE KIDNEY FUNCTION TEST

(*Wisc. Med. Jl.*, June)

If the presence or absence of kidney dysfunction is the only information desired, it is usually unnecessary to carry out other procedures in the face of a normal concentration test, because the first indication of renal damage is a loss of ability to concentrate urine.

The finding of a high specific gravity in the presence of a low psp. test and an increased concentration of non-protein nitrogen in the blood tends to eliminate from consideration the possibility of a primary renal factor.

The following procedure is satisfactory:

- 1) Limit fluids to 1,000 c.c. the day before the test and allow at 6 p. m. before the test a meal containing no more than 200 c.c. of fluid. Provide no more fluid or food until the test period is over.
- 2) Void at about 7 p. m. and discard this specimen.
- 3) Save all urine voided after 7 p. m. to and including 7 a. m. the following morning. Label the container "No. 1 specimen."
- 4) Collect No. 2 specimen at 8 a. m., No. 3 specimen at 9 a. m.
- 5) In a normal individual the specific gravity should reach 1.025 in at least one specimen.

According to a decision by the Supreme Court of Missouri in 1910—

One professing to be able to ascertain by examination of his patient the cause of his trouble, and to indicate the proper treatment is practicing medicine.



# Occupational Dermatoses In Civilian Practice\*

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and

J. LAMAR CALLAWAY, M.D., Durham, North Carolina

IT HAS BEEN our observation that industrial dermatoses are, perhaps, the poorest professionally handled group of industrial injuries or diseases falling in the domain of Workmen's Compensation Laws. Frequently an occupational dermatosis is not recognized as such and just as often an entirely unrelated dermatosis is attributed to an occupational contact. For example, almost any textile worker with a dermatitis has "dye poisoning" in his own mind and frequently in the mind of his physician.

Undoubtedly, some of the confusion which exists is due to the fact that compensation commissions usually do not recompense the physician satisfactorily for the laborious and time-consuming details of doing a searching history and endless patch testing in order to establish a definite diagnosis. A surgeon who treats an industrial fracture is usually rather adequately recompensed for his time by a compensation commission, but this is usually not true in the case of a physician who tries to settle the question as to whether or not an obscure dermatosis is on an occupational basis.

Occupational disease as exemplified by occupational dermatitis is distinguished from industrial accident in that the former requires *extended exposure* and does not imply failure of the employer to furnish a safe place to work, while by the latter is implied an event which takes place fortuitously at a fixed time without one's foresight or expectation. In the case of occupational diseases, conditions are present to which all employees of a class are subject, and the disease is produced as a natural incident of a particular occupation.<sup>1 2 3 4</sup>

Many States differentiate between industrial accidents and occupational diseases in recognizing compensation claims. A few States recognize an occupational dermatitis venenata as compensable by statute, while in other States, including North Carolina, nothing is expressly stated with reference to dermatitis (venenata); still there can be little doubt from interpretation that skin conditions are within the protection of the law. Other States, including South Carolina, have no provis-

ion with respect to occupational diseases, but most of them will recognize a claim for such diseases whenever there is a causal relationship between the primary injury and the subsequent disease.

## CAUSES OF OCCUPATIONAL DERMATOSES

Schwartz and Tulipan<sup>1</sup> have listed the causes of occupational dermatoses as: (1) mechanical, (2) physical, (3) biological, and (4) chemical. As in all types of work instances of dermatitis produced by mechanical factors are seen. This condition most commonly occurs as an infectious eczematoid dermatitis in which traumatic abrasions and fissures become secondarily infected, and the skin exhibits an eczematoid reaction to the invading bacteria. Ordinarily this type of dermatitis responds well to simple anti-bacterial measures and avoidance of trauma. The physical agents as causes for occupational dermatoses are uncommon in this area. In a like manner biologic factors are observed infrequently as a cause of occupational dermatoses in the Carolinas and Virginia. In this region the greater part of industry in which occupational dermatoses are seen has to do with the handling of textiles and are usually produced by chemical agents. Practically all instances of industrial dermatoses due to contact with chemical agents or dyes fall into one of two groups: (a) chemical agents which are not harmful to the average person but to which certain individuals become hypersensitive after sufficient exposure and which in such individuals produce a contact dermatitis. Many chemicals used in the textile industry are highly sensitizing in character; (b) chemical agents which are primary irritants and will produce "irritative" dermatosis in any individual in whom sufficiently intimate contact of the skin occurs.

## Diagnostic Criteria for Occupational Dermatoses

1. Occurs during employment
2. Tends to clear when away from work
3. May reappear when same work is resumed
4. Others doing similar work similarly affected
5. Dermatitis may be reproduced by patch test
6. Other factors have been excluded.

Sometimes it is necessary to have the patient keep a careful diary of his activities, particularly, if he works in different places and with a number of substances. A careful history will show that when he is away from work his eruption either disappears or improves only to become aggravated on returning to work. Frequently, other employees

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doing the same type of work will be found to have a similar affection. One must constantly keep in mind, however, that even though the patient may be suffering from a contact dermatitis, his skin trouble may be due to some contact at home and entirely unrelated to his occupation. In like manner, a fungus infection, an infectious eczematoid dermatitis, or a drug eruption may be producing the eruption which is entirely unrelated to his occupation.<sup>5</sup>

#### EXAMINATION

A knowledge of causative factors of the various dermatological entities frequently helps to eliminate occupational dermatoses after examining the skin. In general, however, the contact dermatitis appears on the exposed surfaces such as the hands, arms, face and neck. Contact dermatitis is more prone to involve the dorsal surface of the hands while the common dermatophytid is more frequently located on the palmar surface of the hands and fingers. Other specific dermatoses may be readily eliminated.

#### PATCH TESTING

Each patient suspected of having an occupational dermatitis should be patch tested to all of the substances to which he comes in contact. This is a laborious, time-consuming procedure, but there is no substitute. Detailed lists of substances, dilution strengths and procedures may be found in the extensive works of Weber<sup>6</sup> and Rostenberg and Sulzberger.<sup>7</sup>

Areas free from dermatitis such as the back may be used for patch testing. The suspected material to which the patient may react is placed in direct contact with the skin. A non-irritating material such as unvarnished cellulose should be used immediately over the substance, and an adhesive plaster is placed over the cellulose to hold the material in place. This is left in place for twenty-four hours and is read as 1+, 2+, 3+ and 4+. 1+ denotes erythema; 2+ erythema and edema with early vesicles; 3+ shows erythema with edema and vesicles, and 4+ gives a bullous response. When a positive skin reaction is obtained to a substance, a patch test should be applied to a control subject inasmuch as the substance in question might be a primary irritant.

#### Limitations of the Patch Test

1. A known irritant may produce a negative test.
  - (a) Local immunity of tissues
  - (b) Dilution too weak
  - (c) Actual working conditions not reproduced.
2. Generalized Hypersensitivity
  - (a) Allergic eczema
  - (b) Arsenical dermatitis.
3. False-positives are frequent
  - (a) Substance used may be a primary irritant
  - (b) There may be polysensitivity present.

A known irritant may produce a negative type of test at a distal site such as over the back whereas

it might be positive if applied at the site of the contact dermatitis. The dilution used sometimes may be entirely too weak, and may not represent the exact materials with which the patient works. Patch tests done in the office do not reproduce humidity, dust and other actual working conditions and may give a false negative test.

If a patient has an allergic eczema or an arsenical dermatitis, even though reacting to the substances causing the occupational dermatosis, a false negative patch test may be elicited.

Just as important, however, are the false positive patch test produced by dilutions which are too strong and which are primary irritants from the outset. There may also be a polysensitivity present with cross sensitivity reactions.

#### FOLLOW-UP OBSERVATIONS

In the event that the patient has a clinical occupational contact dermatitis and we are not able to ascertain the etiology by the above methods, the patient is asked to keep a complete diary with detailed notations about everything that he does in his work, including a list of the substances with which he works, with daily comments about the condition of the skin. In the event that no significant help is obtained by a careful diary and it still appears that the patient has an occupational dermatosis, the patient is advised to remain away from work for two to three weeks. If the patient should have an occupational contact dermatosis, he ordinarily will show marked improvement (or, perhaps complete recovery) within this period of time, provided that he receives appropriate local therapy. This usually consists of measures to take care of secondary infection along with preparations to stimulate healing.

We feel that the following case report is worthy of comment:

#### Report of a Case

A 37-year-old overseer in a fixing room of a textile plant was first seen at Duke Hospital on July 26th, 1945. He had never experienced any skin trouble until three or four months previously at which time he developed a vesiculopustular eruption of the hands.

He had held the same job before the war, but had been in service for two years. The trouble with his hands commenced about three or four months after resuming work upon his return from the Armed Forces.

He was cognizant of the fact that a fixer called Surfax was being used, and he did not recall ever having used this substance prior to entering the Armed Forces.

The patient was first seen at Duke Hospital on December 21st, 1945. Prior to that time two dermatologists had treated him and believed that he did not have an occupational dermatosis. He was admitted to the hospital on July 26th, 1945, because he had not done well on treatment at home. He remained in the hospital until August 6th, 1945, and at the time of discharge had shown considerable improvement following treatment with wet dressings, Castellani's paint, etc.

While in the hospital rather complete studies were done. Routine examination of his blood and urine showed no abnormalities. Examinations for fungi from the hand le-

sions were negative. A comprehensive x-ray survey showed nothing abnormal other than rather marked alveolar absorption, multiple dental abscesses, and caries. Intracutaneous tests to various streptococcal allergens in 1:100 dilutions were all negative, but a test with oidiomycin at 24 and 48 hours showed a slightly positive reaction.

He was not seen again until December 21st, 1945, at which time he stated that he had been improving slowly until two weeks previously, at which time he visited the mill at which he works for about five minutes in order to make arrangements to return to work. While he was in the plant, his hands began to itch and burn and two days later were covered with vesicles and pustules and were edematous. He responded very satisfactorily on the local therapy which we gave him along with sulfadiazine by mouth.

On January 4th, 1946, he returned and was patch-tested to 38 substances with which he worked in the mill. Of these, two gave positive reactions—one being Surfax, the other sodium sulphide; the former produced no reaction on a control, whereas the latter produced an immediate reaction which confirmed our belief that it was a primary irritant.

We were subsequently asked to make a personal inspection of this mill. One other employee was seen who gave a history of having a dermatitis of the hands and forearms—he worked with his sleeves rolled up—only when he worked with Surfax. He also exhibited a positive patch test to Surfax, and negative tests to all other occupational contacts.

Both of the above patients continued to have trouble until the middle of April, 1946. At that time a new fixer was substituted after both of the above patients had shown negative patch tests to the new preparation.

We have had a letter from the first patient dated January 15th, 1947, which states: "I seem to be completely cured now, and I have not been bothered with this, nor has anyone else in our department since we have completely discontinued the use of Surfax."

#### Prevention of Occupational Dermatoses

1. Examination of employees for preëxisting skin conditions
2. Use of the patch test as an aid in the evaluation of susceptibility to possible irritants
3. Protective clothing, cleanliness, and mechanical devices
4. Proper hygiene of plant and workers
5. Advantageous use of race, color, and sex of employees
6. Changes in manufacturing processes
7. Substitution of less noxious for irritating materials.

Occupational dermatoses in plants can be frequently prevented by employing people who have no preëxisting skin eruption or allergic background, and by using a patch test to exclude persons already known to be susceptible to materials used. In a like manner protective clothing, mechanical devices, proper hygiene of the plant and employees is helpful. By a proper evaluation of race, color, and sex of employees many susceptible individuals can be eliminated. Eventually, a substitution of less noxious materials and changes in the manufacturing processes may be necessary.

#### PRINCIPLES OF TREATMENT

The first principle in treatment is to avoid contact with proved irritating materials following which the eruption usually clears completely with

a simple creme or plain calamine liniment. If the area has become secondarily infected it should be treated with the usual anti-pyogenic measures. If the eruption has become eczematous it may require compresses, judicious use of tar preparations, and perhaps x-ray therapy, in sub-fractional doses. In general if the dermatosis does not respond to avoidance of contact and simple measures, the patient should be treated by someone especially trained in diseases of the skin.

#### SUMMARY

(1) This discussion makes no pretense of covering the subject of occupational dermatoses such as is found in the works of Schwartz and Tulipan,<sup>1</sup> and Foerster or Lane.<sup>2,3</sup>

(2) We feel that emphasis should be placed on the subject of occupational contact dermatoses as seen in our section of the country. Sometimes, the patient may go for several months and see several doctors without the correct diagnosis being established.

(3) A careful history, complete examination of the skin, thorough patch testing to occupational contacts, and a detailed diary with perhaps absence from work for two or three months may have to be utilized in the evaluation of a suspected case of occupational contact dermatitis.

(4) Patch testing to occupational contacts is a helpful aid in studying a case of suspected occupational contact dermatitis. One should not, however, permit the results of such tests to interfere with a sound clinical judgment.

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#### Discussion

DR. ROBERT E. PERRY, Greensboro: Dr. Barefoot has presented an extremely complex subject in a concise and most interesting way. It is almost always a headache to the man in general practice, as well as the dermatologist and allergist. It is a very common disease and is becoming much more frequent due to the advance in plastics, syn-

thetics and industrial chemistry during and following World War II.

Of course, the most important single procedure Dr. Barefoot mentioned is the patch test. This test, though, at times may be confusing. If so, separation from work, separation from home and elimination of various lotions, cosmetics, sprays and powders will give a lead to the physician. Also, the fact that the dermatoses of contact origin are almost confined, or at least more severe on the exposed surfaces—hands, forearms, face and neck—usually being well demarcated. This should arouse suspicion.

One word of warning I would like to leave with you gentlemen who see industrial cases is do not make a snap diagnosis of contact dermatitis in industrial workers. I say this not so much in criticism, but as you know there is a tight and sensitive balance between employers and employees at the present time in the South, due to union organizing activities. If the diagnosis of industrial contact dermatitis is made, it is difficult to disabuse the employees mind of that diagnosis, even though his disease may be due to hair tonics, fly sprays, etc., which are not in the remotest way connected with his occupation. If the original diagnosis is incorrect, and the right diagnosis is made later, the employee feels there is collusion between the doctor, the employer and the insurance company. He becomes disgruntled and a trouble-maker for a company which is not at fault.

One more thing—and this is a gripe, but I feel is a justifiable one—and that is the arbitrary manner in which the Industrial Commission usually cuts bills for diagnosing and treating these cases. You men know what I mean. The commission seems to take the point of view—no doubt some statements are padded—that all doctors pad. This is incorrect. I have seen the time I could make a better living treating shop girls than I could treating industrial cases. The State Society appointed a committee to adjust the situation, but I do not know what the results have been to date.

I appreciate Dr. Barefoot letting me discuss his interesting paper and I can assure you you will see and hear much more of contact dermatitis in the future.

DR. BAREFOOT (closing): I certainly agree with everything Dr. Perry has said and I want to thank him for his discussion. I don't know why I took so long this morning. I had sort of gone over it before. I did want to say something about the management of these conditions but probably most of you have had experience in it and it is probably not too important. Thank you very much.

#### TOPHACEOUS GOUT

(Clement Bocalini, Floral Park, N. Y., in *Med. Times*, Feb.)

For the past 15 years the patient has been under medical care for episodes of severe pain of both feet. Each attack left him less and less able to walk properly until this became too painful to attempt. The patient was able to obtain the services of well known medical and orthopedic specialists. Innumerable x-rays were taken. Blood and urine analyses were repeated in quest of a spinal disease. After six years of repeated attacks he was informed that since no known cause could be found for his ailment, it would be necessary to do a nerve block on both ankles. This was performed nine years ago. Since this time he has had occasion to doubt the efficacy of this treatment, although he could bear up under the pain. He has acquired the habit of walking on his heels, with a hesitant gait.

At home, with the onset of his attack, he was first placed on codeine and neocinchophen. However, his fever rose to 102° orally and in a few days he was unmanageable because of pain. He was hospitalized for this reason and in the hope that we might unravel the problem.

A short, ruddy and robust male lying in bed, unable to move his lower extremities; b. p., cardiovascular system, ecg., abdomen, upper extremities negative; the lower extremities extended, swelling of both knees and both ankles, with pain and tenderness in each joint, these were hot and fixed; small indurations on lobes of both ears. A neurological examination could not be done at that time, but later was negative.

Urine analysis, blood count were normal; a normal uric acid of 3.5 mg. sedimentation rate 22 mm. per hour, considered high. He was placed on salicylates with no immediate benefit, but with the addition of penicillin showed a drop to normal. Neither codeine nor morphine seemed to abate the pain; yet when large doses of thiamine were given intramuscularly the patient was relieved of pain and slept.

X-ray findings of destruction of both bones of the first metatarsal-phalangeal joint of both feet was such that no joint existed; on the right foot there was destruction of the head of the third metatarsal. There were hypertrophic changes in both knees. The roentgenologist could not venture an opinion as to the cause of such destruction. Orthopedic opinion was that because of the symmetry of destruction, and because of its clinical course we were dealing with a tophaceous gout. The nodules were composed of sodium bi-urate crystals.

The patient was again placed on neocinchophen and on a rigid purine-free diet. Later blood uric acid showed marked increase as his attack subsided, reaching 13.3 mg. and then again coming down to normal as he faithfully followed his routine of diet and medication. He has continued to improve, being able to travel back and forth to the west coast, and though the destructive lesions leave little to hope for in the way of repair, he has been getting around more in the past six months than he was able to for years, prior to this last attack.

#### DISCUSSION ON ANTIBIOTICS

(Jl. A. M. A., March 1, 1947) . . . . .

Dr. James E. Potter, Palm Springs, Calif., says his experience with the use of penicillin has probably been the same as every other man's who had used much of it. It has been both encouraging and discouraging. In some cases the doctor thinks, "I can clear it up in just a few days with a few injections of penicillin." He gives it, but is disappointed. Dr. Potter has made a practice of running cultures, but one cannot definitely put one's finger on what organism will respond to penicillin treatment. Trial and error is the only way to find out. He gives penicillin to practically every patient with urinary infection that comes into the office, and in most of them gets a very satisfactory response.

The initial dose of streptomycin and also the initial dose of every other urinary antiseptic should be a maximum dose.

Dr. Victor Lesspinaise, Chicago, says a man 50 years of age had a ureteral stone which he manipulated. The next morning his t. was up a bit. Penicillin was promptly ordered. The following morning t. up more; third morning 105, some jaundice. Blood  $3\frac{1}{2}$  million red cells (5 million when patient came in); next morning t. 105.5, r.b.c.  $1\frac{1}{2}$  million. A culture of the urine revealed B. pyocyaneus. Patient turned over to the streptomycin group; they gave streptomycin and his t. dropped. The fever never came back. Three weeks later blood count gradually improved under symptomatic treatment; still had the organisms in his urine, but he was symptom-free; blood back to normal. Three weeks after that his urine culture was negative and his blood count, blood condition and general clinical condition normal.

# X-ray Treatment of Skin Cancer\*

ROBERT H. HACKLER, M.D., Washington, North Carolina

**P**ROBABLY the first case of skin cancer treated by x-rays was that reported by Stenbeck of Stockholm in 1899, four years after Röntgen made his great discovery. The purpose of this paper is to review briefly the fundamental factors involved, as to the lesion, and to the physics of this method of treatment. We all know that this type of cancer is treated in a variety of ways. Only the x-ray treatment will be discussed here.

These lesions are usually on the face, hands, ears or neck and are of common occurrence along the Eastern Shore of North Carolina, especially in the villages on the Outer Banks where fishing, the main means of livelihood, exposes these people for prolonged periods to hot sun, rain and wind.

When it has been decided that x-ray therapy is best in a given case of skin cancer, the physician should take into account before beginning the treatment, the following factors:

1. *Type of lesion:* at times it is impracticable to get a biopsy, and then the location is especially important. Squamous-cell carcinoma is more frequent between the ages of 30 and 50 years, and is more prone to occur on mucous membranes, at mucocutaneous junctions and on the extremities. It is usually of moderately short duration, is hard, and elevated with a solid border and at times has a fetid purulent exudate. The basal-cell type usually occurs on the face of a person over 50 years of age. It may show a serosanguineous exudate and may bleed profusely at times. Many radiologists do not vary the treatment, whether the cancer be basal-cell or squamous-cell. However, it has long been thought that squamous-cell lesions require heavier doses of radiation.

2. *Size of the lesion:* the larger the lesion the less radiation will be tolerated. This is due to the fact that there is an increase in the back-scatter in the larger areas and tissue repair is slower since there is trauma to a larger area of blood supply.

3. *Infiltration of the lesion:* it requires a larger dose of radiation for the raised lesion because the bulk of the tumor, acting as a filter, absorbs a certain percentage of the rays. Widman says that the depth of the lesion is usually commensurate with the progressive increase in the surface area, and his plan of treatment depends on whether the lesion is less or greater than 0.5 cm. above the surrounding normal skin. He considers this more important than the size of the surface area since the elevated crust will filter some of the longer waves and help protect the normal structures under the growth.

4. *Location of the lesion:* As this type of cancer is usually on an exposed surface the cosmetic result must always be considered. Over-treatment about the eyelids may result in cicatricial contraction producing unsightly results, and late radiation effects may eventuate in cancer formation in the margins of the ulcer. Lesions on the auricle of the ear are rather radioresistant and have a poor blood supply. Friedman recommends surgery in these; however, many radiologists believe the same results can be obtained here as in similar lesions in other areas of the skin. The advantage in using x-rays is to obtain a better cosmetic result. Carcinoma of the penis and vulva is better treated surgically.

Now the type of radiation to be used must be determined. In treating a skin cancer the ideal dose is that which will deliver as many *r* as possible to the cancer cells, and yet allow the exposed non-cancerous tissue to return to normal. The margin between the dose lethal to cancer and the tolerance dose to the surrounding skin and the underlying tissue is narrow. To obtain this, the radiologist should carefully consider every detail of the lesion and of the rays he intends to use as to:

1. *Voltage:* The intensity of the radiation varies as the square of the voltage. A higher voltage with increased filtration is used for infiltrating lesions.

2. *Milliamperage:* In our department at Tayloe Hospital we use 25 milliamperes in order to shorten treatment time from the 5-milliamperes so much used in skin radiation. This does not alter the quality of the ray.

3. *Time:* The dose varies as the time. A knowledge of the output of the x-ray machine determines the time necessary to give a predetermined dose.

4. *Target-skin distance:* The dose delivered to a lesion varies inversely as the square of the distance.

5. *Half-value layer and effective wave length in A units:* This information adds to our knowledge of the quality of the rays from a given x-ray machine.

For the past several years we have treated small skin cancers showing only a slight elevation above the surrounding normal skin with low-voltage, lightly-filtered radiation after this formula:

100 Kilovolts — 25 milliamperes — filtration equivalent to 1 mm. aluminum—10 cm. target-skin distance. 3000 to 3500 *r* is delivered in divided doses within five days.

No differentiation is made between squamous- and basal-cell growths. In case of small lesions

with more elevation the same factors are used with the total dose reaching 4000 to 44000 r.

For the larger lesions showing infiltration higher voltage and heavier filtrations are used:

200 Kilovolts—25 milliamperes—0.5 mm. copper and 0.1 mm. aluminum filtration—50 cm. target-skin distance. 500 r is given daily until the total dose reaches 4000 to 5000 r depending on the size and location of the lesions.

#### SUMMARY

1. The basic physical factors of the lesion and the x-rays have been discussed in an endeavor to correlate the two and arrive at a satisfactory treatment regimen.

2. Each case must be considered as an individual problem and there is a divergence of opinion as to what combinations of factors give the best results.

3. Low-voltage, lightly-filtered x-rays give good results in superficial lesions. These lesions showing much infiltration are better treated with higher voltage and more filtration.

4. The objective in treating skin cancer is to destroy the lesion permanently, with a minimum of injury to the adjacent normal tissue.

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#### ALLERGIC REACTIONS POSSIBLE FROM INFLUENZA VACCINATION

CT. J. Curphey, Hempstead, N. Y., in *Jl. A. M. A.*, Apr. 12th)  
A fatal case of severe hemorrhagic allergic reaction occurred in a child after influenza type A and B vaccine was given subcutaneously in the prescribed dose. It is recommended that attempts be made to further purify the various virus vaccines now becoming generally used, so as to materially diminish the amount of reacting egg substances in the mediums of the marketed product. It is further recommended that intradermal skin tests be performed with small doses of the antigen, and that if local reactions take place the immunizing program be administered by way of divided doses given at short intervals. Since children appear more sensitive to egg protein than do adults, greater precautions should be taken in this group of patients in the course of immunization with vaccines grown on egg mediums.

#### DEMEROL AS A PREANESTHETIC AGENT

(C. A. Hunter, Jr., et al., Kansas City, Kansas, in *Jl. Kan. Med. Soc.*, March)

For preanesthetic medication demerol was used in 37 consecutive cases, morphine in 55. All types of cases are included, regardless of sex, age, anesthetic agent, or operation. By such a comparison we have found that the patient who is to receive an anesthetic may be adequately prepared by the proper use of demerol in place of morphine.

#### Advantages of demerol:

There is little or no respiratory depression.

It is more desirable in the older because of its shorter duration of action and less respiratory depression.

It produces partial drying of the mucous membranes.

It is useful in morphine-sensitive patients.

Contra-indications for the use of demerol as a preanesthetic agent:

Patients with severe pain.

Patients with intracranial lesions.

Children under 12 years of age.

#### THE SEDIMENTATION RATE IN GENERAL PRACTICE

(A. A. Numbers, in *Canadian Med. Assn. Jl.*, Sept., 1946)

The test may be done in any office. Blood is drawn from an arm vein, citrated and set up and the reading taken at the end of an hour. I use the Westergren tubes, a few grains of solid potassium citrate as an anticoagulant, and make a single reading at the end of the hour.

In case of no physical findings and no diagnosis made, but the s. r. over 25, the patient is followed carefully for development or return of sedimentation rate to normal. A neurotic person with many complaints and s. r. normal, psychiatric investigation is necessary; but with the s. r. increased, general clinical investigation should be carried through. In the differentiation of chronic appendicitis, salpingitis and other pelvic disease, the s. r. can often give real help.

Where the sedimentation rate is increased, pathologic condition should be searched for, but a normal rate does not mean that there is no disease condition.

In acute infectious processes the s. r. falls to normal with recovery.

In acute rheumatic fever and infective arthritis, the t. and white count come down along before the s. r. does, and the patient should be kept in bed till the s. r. is under 16 mm. (Westergren) for three to six weeks.

In coronary thrombosis the s. r. goes up in 24 to 48 hours and very gradually comes back to normal with healing. Since the rates were used to indicate healing, many of our patients are got out of bed much sooner than they were 10 years ago.

In the malignancies the s. r. usually returns to normal in six to eight weeks if removal of the growth is complete. If not metastases should be suspected. If the s. r. is still normal six to 12 months after operation, there will probably be no recurrence.

#### INFRARED RAYS USED TO EXAMINE EYES (The Diplomat, May)

Examining human eyes with invisible infrared rays appears to be a new use for this type of radiation. The advantage of using this invisible light is that it does not disturb the eye under observation as do rays from ordinary light. The reflected rays form an image which is made visible to the observer by use of a telescope similar to that used on Army sniperscopes.

The sniperscope, attached to a rifle, shot out infrared beams that were reflected back by an enemy prowling in the dark, clearly outlining him in the receiving telescope. In examining the eye, the ray is used to measure the pupil, and the instrument is called an infrared pupillometer.

With this device, the eye pupil appears dark and the iris bright.

# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### THE NATIONAL ANERGIA

THE PRESENT PERIOD should become known in American history as the anergic era. Its chief characteristic is man's disinclination to do a day's work. And not a few would do no work at all. And many insist upon being paid by the tax-payers for not working. The present aversion to work is not passively exhibited; many are aggressive in their determination not to work.

I am not on intimate terms with the Divine Mind. Were it not impious to question Divinity, I should ask why labour was put upon man as a primal curse. Shortly before the curse was pronounced, God had been steadily engaged in creating out of nothing the spacious universe. Why purposeful activity was enforced as a curse upon man by divine decree I do not know. But I have often wondered if man's fate might not be even worse than it is today if man had been permitted to pass his days in unbroken idleness.

The newspapers announce that the retail stores of the City of Richmond—more than fifty of them—will not be open for business on any Monday. The first such workless Monday came on July 14th. The one-day closing each week is an experiment that may, or may not, be continued throughout the winter. But the five-day week for the workers in the stores may develop into a year-round custom.

Many of the employees of the State of Virginia do not work on Saturday. And many of those who are in the employ of the City of Richmond are given a whole day's holiday each Saturday.

One cannot but wonder why the tax-payers must support in idleness on one day of each week many of those who work for Virginia and on another day of the week many others who work for Richmond.

It is probable that most of the functions of government would be carried out both more efficiently and more economically if the work could be let to contract by competitive bidding.

Some of the beliefs that sustain the devotees of the democratic philosophy of government are but pleasant delusions. And one of the chiefest of all such irrational ideas is the dictum that all men are created equal. There are probably few absolute equalities in Nature. It must be rather obvious even to those who do little thinking that many individuals enter upon life at their births so handicapped by irremediable deprivations that they can-

not run alone the race set before them. Thomas Jefferson was speaking rhetorically rather than factually in verbalizing one of his most appealing pronouncements. I believe that his own brother was denied equality with him by innate mental subnormality.

And all around Thomas Jefferson, in Virginia and in the other colonies, many children must have been born in 1743, made famous by his birth, who had been predestined by hereditary and biological denials to pass their lives on a plane far below that of the creator of the American Declaration. Inferiors revolt that they may be equal, and equals that they may be superior. Such is the state of mind which creates revolutions. The above statement is that of Aristotle.

Another cherished democratic delusion manifests itself in the existence of a public treasury. Certainly in a government conceived of by the people and sustained by them, there can be no other source of public revenue than the personal purses of the citizens of such a government. Yet there are probably few citizens who sense that even a large appropriation from the public treasury can have a depleting effect upon their own resources.

I recall a statement of Charles E. Hughes, whose fitness for the Presidency did not place him in the White House. Once the former Chief Justice of the United States said: I believe in work, hard work and long hours of work. Men do not break down from overwork, but from worry and dissipation. Long hours of hard work throughout the years have not shortened the life of that statesman. He lives wholesomely in old age.

Joseph Conrad brought himself from a common sailor to be one of the great writers of our day. Yet he had to teach himself the alien language—English—in the use of which he acquired his fame. Conrad said it all succinctly and forcefully: A man is a worker. If he is not that he is nothing.

Elbert Hubbard said that folks who never do any more than they get paid for, never get paid for any more than they do. The individual who divides his attention between his work and his watch may eventually have nothing to do but to look at his time-piece.

The basic feature of all teaching should be to inspire young people to acquire knowledge and to learn how to make wholesome use of it. One of Voltaire's aphorisms is now being confirmed: Labor rids us of three great evils—irksomeness, vice and poverty.

Most of the unhappy predicament of our own people is due to the determination of many of them to live without working. Life and activity are all but synonymous terms. Those who would continue to live must either work to support themselves or be supported by others.

Many of our people have long been overpaid and underworked. But the hedonistic holiday is coming to a close. If we do not become interested in the day's work, our civilization shall perish. It came into being as the result of the incessant labors of our pioneer ancestors. If we are not willing to work to sustain our inheritance from them, we deserve to perish. The government that inculcates idleness in its people is their enemy.

## OPHTHALMOLOGY

C. B. FOSTER, M.D., *Editor*, Charlotte, N. C.

### RETINOSCOPY

THIS is an objective method of measuring the refraction of the eye. In common with all objective tests it is valuable in affording comparison with a subjective test—in this case the manifest refraction. (The examiner's measurements are checked against the patient's interpretation of his own visual acuity.) Without this objective method of retinoscopy, we would have no means of accurately obtaining the refraction of children, illiterates, and deaf-mutes.

The method consists simply of flashing a light into the patient's eyes, while he maintains fixation upon some point, and of observing the characteristics of the light reflex in the pupillary area.

Scarring of the cornea, and keratoconus cause the observed light reflex to be distorted. In this brief discussion, we shall stick to the phenomena observed in cases of clear corneae of average curvature.

The usual instrument employed is an electric self-luminous retinoscope bearing a round plane mirror, with a small central aperture. The mirror is held before the observer's eye. The light is projected through the patient's pupil, and strikes the retina, where it forms a new source of illumination, and "rebounds," as it were, back outward through the pupil in the direction whence it came. The observer, peering through the central opening of the mirror perceives these outcoming light rays as an illuminated area in the pupil.

By application of the laws of physiological optics, one is enabled to differentiate the varieties of ametropia, and to measure the amount of each.

How is this done? First of all it must be understood that the refractive media of the eye are going to bend outcoming light rays (from the new or reflected source created on the retina) in the same direction and to the same degree as they bent the ones originally entering. In other words, an eye bending light rays in a myopic way in receiving them will bend them in a myopic way in issuing them. This is an application of the law of conjugate foci. The extraocular focus of the light rays is the conjugate of the intraocular focus.

We then aim to find the point at which the observed rays of light come to a focus (the anterior conjugate focus), and we use lenses in the trial frame before the patient's eye to assist us.

How can we tell where they are coming to a focus? Without going into a long explanation of the mechanism of the light reflex movement of the pupillary area it may be stated in Cowan's words: "the illuminated portion of the retina (seen reflected in the pupil) appears to move in the same direction to the tilting of a plane mirror. . . . as long as the anterior conjugate focus lies behind the observer's eye."

We have then, to locate ourselves in reference to the anterior conjugate focus, or better yet, taking a convenient distance from the patient, use lenses in the trial frame to bring the focus to us.

Let us be seated at a distance of one meter from the patient. At this distance only an eye of exactly one diopter of myopia will have its anterior conjugate focus at our eyes. (It would be hard to distinguish any pupillary light motion with the tilting of the mirror under these conditions.) An eye of less myopia than one diopter would have its focus behind our head, and would accordingly show motion in agreement with the tilt of our mirror ("with" motion). An emmetropic eye, emanating parallel rays of light would have no focus (it would lie behind us, for practical purposes), and would show motion of the pupillary light reflex in the same direction as the tilt of our mirror. A hypermetropic eye would issue forth divergent light rays, with no focus, and would reveal in its pupil motion of the light reflex in agreement with the tilt of the mirror. A myopic eye of more than one diopter myopia would have its anterior conjugate focus between us and the patient, and would show a pupillary light motion opposite to the tilting of the mirror ("against" motion). An astigmatic eye, having more than one anterior conjugate focus would reveal a variable pupillary light motion, opposite in one direction to another, or of greater or lesser extent in one direction than another.

Having thus roughly diagnosed the refractive state of the eye before us, by noting the position of the anterior focus according to the characteristics of the reflected pupillary light, we next must bring the anterior conjugate focus to correspond with the position of our eyes, and in so doing are well on the way to having measured the refraction of the eye in question.

In case of the eye of one diopter of myopia, the anterior focus is in agreement with our position. We know this, because no pupillary light motion is easily obtained. If we should place a plus quarter lens in the trial frame, the focus would be moved to a point between us and the patient, and the pupillary light motion would be "against" the



motion of our mirror. If we took the plus quarter out and inserted a minus quarter the focus would be moved to a point behind us, and the pupillary light motion would be "with" the motion of the mirror. Thus one would know that he had an eye of exact focus at one meter, and therefore of one diopter of myopia. From our position at one meter in examining this eye, we could bend slightly forward, leaving the focus behind us and giving us a pupillary "with" motion. Or we could lean somewhat backward, leaving the focus in front of us, and giving a pupillary "against" motion.

If we start retinoscoping an eye showing a pupillary light motion in agreement with our mirror tilt, we must place plus lenses in the trial frame to bring the light rays to a shorter focus. When we see produced a motion against our mirror motion, the focus has been moved to a point in front of us. By using lenses of lesser strength we can finally arrive at a point where it is possible to shift the focus from before to behind our head with a quarter variation, and then we know that we have made the anterior conjugate focus coincide with the position of our eyes.

Remembering that we are working at a distance of one meter, for convenience and that it takes a plus one diopter lens to focus parallel rays of light at that distance, the refraction at infinity of the eye being examined is arrived at by deducting one diopter. For example, having started from a "with" reflex and having found the point of reversal, and calculated the point of neutrality (where the anterior conjugate focus and our position coincide) and measured this with a plus three lens, then the refraction of the eye is three minus one, or two diopters of hypermetropia.

If we had begun our retinoscopy with an "against" light motion in the pupil, we would have to move the focus back by employing a minus lens in the trial frame. As soon as a "with" motion had shown, we would know that the focus was behind us, and by reducing the strength of the minus lens, we could eventually arrive at the point where a variation of a quarter in the lens strength would shift the focus to either side of our head. Then would the point of neutrality or positioning of the anterior conjugate focus lie at our chosen distance of one meter. We would then have to subtract a plus one lens to obtain the refraction at infinity. For example, having begun with an "against" motion and located the focus with a minus two lens, the correct refraction of the eye would be minus two take away plus one, or minus three diopters of myopia.

If astigmatism were present, there being two anterior conjugate focal planes, instead of one, the light reflexes in the pupillary area would not be uniform in all directions, not spherical, but varia-

ble in different directions, and tending to be band-like across the pupil. The band would be found to lie in the axis of astigmatism, and the lesser motion would be in the meridian opposite to the band, in the meridian of greater error.

Two procedures can be followed. In the first, one meridian then the other can be retinoscoped with spheres finding the anterior conjugate focus of each, and noting the difference and the estimated axis of the astigmatism.

In the second the meridian of lesser error can be measured with spheres, and then cylinders of appropriate kind and strength placed in the meridian of this measurement (corresponding with the axis of the band) to measure the opposite meridian. When this is accurately accomplished the pupillary light motion is spherical, and shows the same motion in all meridians. The remaining procedure to determine the refraction at infinity is as has been described for spherical errors.

It should be noted, that although retinoscopy at a distance of one meter has been described, the distance could as well have been two meters, or one-half meter. At the former interval a plus one-half diopter lens would focus parallel rays of light, and therefore a plus one-half would be deducted from the measurement of the anterior conjugate focus. At the latter distance of one-half meter, two plus diopters would be deducted to arrive at the refraction.

For those interested in further consideration of the subject, an excellent article on "The Physiological Optics of Retinoscopy" has been published by Victor Johnson, Ph.D., in *Archives of Ophthalmology*, January, 1935.

## SURGERY

WILLIAM H. PRIJOLEAU, M.D., *Editor*, Charleston, S. C.

### INVERSION OF ENTIRE APPENDIX IN INCIDENTAL PROPHYLACTIC APPENDECTOMY

THE PROPHYLACTIC removal of the appendix in conjunction with laparotomy for other conditions is generally recognized as desirable provided it can be accomplished with only minimal additional risk. The risk attendant upon this procedure is for the most part connected with sepsis due to cutting across the lumen of the bowel, and to accidents to the suture line more likely to occur in the presence of blood, sepsis and distention.

As a means of obviating some of these risks Dr. J. G. Hallatt, of Oakland, California, advises inversion of the entire appendix, the technic of which was first described in 1923 by Dr. Brandao Filho of the University of Rio de Janeiro. It has been used by others with success. Where applicable

this procedure is of easy performance and has the advantage of not cutting across the lumen of the organ. The technic is described as follows—the mesoappendix is ligated at the base, stripped from the appendix and severed distal to the ligature; the distal end of the appendix is gently squeezed so as to empty it; with a dull probe at the distal end, the appendix is inverted into itself, and finally into the cecum; a single mattress suture obliterates the dimple in the cecum.

During the course of the following ten days, more or less, the appendix, deprived of its blood supply, sloughs into the cecum and is passed by rectum. No untoward symptoms or complications have been recognized as attributable to this procedure.

Inversion of the appendix should not be attempted in the presence of tumors or acute inflammatory conditions of the appendix, or fibrotic obliteration of its lumen. It is important that the procedure be performed in an atraumatic manner.

Common to all surgical procedures there is some attendant risk. It is conceivable that distention of the cecum might lead to separation of the suture line at the base. In such case it is likely that the opening in the cecum would be sealed before slough of the appendix took place, which otherwise would lead to gross leakage. It is a sound principle in surgery that tissues deprived of their blood supply are a potential source of danger and in general are better removed. The necrotic appendix could cause an intramural infection in the cecum. However, in such case the process would probably be limited with spontaneous drainage into the cecum.

Incidental prophylactic appendectomy, by whatever technic, adds a definite risk to the operation. It should be performed only when local and general conditions indicate that the risk is minimal. In some cases complete inversion of the appendix would appear to be the preferable technic.

HALLATT, JACK G.: Inversion of Entire Appendix in Incidental Prophylactic Appendectomy. *Permanent Foundation Medical Bulletin*, Vol. IV, No. 4, November, 1946.

## THERAPEUTICS

J. F. NASH, M.D., Editor, St. Pauls, N. C.

### TREATMENT OF CORONARY ARTERY DISEASE<sup>1</sup>

THE MOST EFFECTIVE MEASURE at the physician's command is a positive ban on smoking, because of the dual cardiac handicap which tobacco presents; the vasoconstrictor action of nicotine and the increase in the level of carbon monoxide in the blood. The combination of a sensible protective philosophy of living and the curtailment of smoking will control many an effort anginal syndrome.

1. O. P. J. Falk, St. Louis, in *Jl. A. M. A.*, June 7th.

Other measures of merit include the use of nicotinic acid, papaverine, *alcohol in moderation*, and teaching the anginal subject to anticipate unavoidable circumstances, such as going out in cold air, by using 1/200 to 1/100 grain glyceryl trinitrate sublingually. Alcohol is probably the best coronary dilator, with papaverine more adaptable to protracted action when needed, two to four grains three or four times a day to prevent angina decubitus, or control a lowering effort threshold of anginal pain.

The use of nicotinic acid as a vasodilator appears justified.

Xanthine derivatives are generally ineffective in effort angina uncomplicated by myocardial failure.

Iodides are probably of value but androgen therapy does not appear justified. Thyroid extract, through general vasodilation, by increasing the metabolism, might decrease the work of the heart even though cardiac output per minute was increased; it also tends to lower cholesterol blood levels. Dosage should be small (1/2 to 1 grain a day) and cholesterol levels should be checked.

When barbiturate drugs are employed for mild sedation they should be alternated with other sedatives such as bromides, carbromal, or perhaps codeine.

In cases in which increasing frequency or severity of anginal seizures the most effective coronary vasodilator is papaverine by mouth or even intravasodilator to ward off threatened occlusion or at least to limit regional vasoconstriction.

In effort angina in the obese with protruding abdomens, partially restored diaphragmatic function by an elastic, lifting type of support apparently aids the return flow of blood to the heart.

The reduction of blood pressure after spinal anesthesia may precipitate acute occlusion in a coronary subject. Furthermore, coronary occlusions tend to occur at night when the tide of pressure is at low ebb. A period of rest during the day is highly desirable if not imperative. Give two grains of papaverine before retiring after a day of unusual strain or stress, particularly when accompanied by the least suggestion of substernal uneasiness. Similar or larger doses through the day may be indicated, as papaverine is the best coronary vasodilator in contemporary usage. Smoking should be interdicted, whereas the use of alcohol in moderation is permitted in cases in which it is well tolerated, since it apparently exerts a protective influence probably because of its vasodilatory effect.

The imminence of complete closure in an already narrowed coronary vessel is suggested when anginal pain results from ever lessening degrees of effort or stress or when it occurs during rest, with or without a history of preceding effort angina.

Acute coronary insufficiency may result from

impoverishment of the supply of blood after hemorrhage, shock or the dehydration of any severe debilitating illness in a coronary subject. This can at times be averted by the prompt intravenous injection of 1 to 2 grains of papaverine, followed by theophylline ethylenediamine intravenously where indicated and by prompt oxygen therapy when available. If papaverine is ineffective within a few minutes, the subcutaneous or even intravenous use of morphine is in order, should the distress be serious or prolonged. The intravenous administration of theophylline ethylenediamine often proves beneficial when congestive failure develops; otherwise it is best avoided, because it increases the work of the heart proportionately more than it enhances coronary flow.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### MODERN CONCEPT OF HEREDITY

A CONCEPT of heredity which appeals strongly to our idea of sweet reasonableness, recently published by a mid-western authority<sup>1</sup> on this subject, is passed on, in its essence, to our readers.

The human zygote is estimated to have 10,000 to 15,000 genes, bound together like beads. The gene is probably a nucleo-protein molecule of the length of one ten-millionth of an inch. Genes do not transform themselves directly into particular traits; they give cells only the potentiality to development.

In contrast to Mendel's theory, the call rather than the whole organism is now to be recognized as a genetic complex, and it is denied that every character is determined by only one independent factor. Many genes synthesize a single character, and each of the genes affects the organism in many ways. A relatively simple appearance, the eye color, depends on at least 20 genes; and the more complicated a character, the more genes are assumed to be involved. If a certain gene is lost from the gene complex the zygote can but exceptionally develop; ordinarily it becomes non-viable. It is justified to assume that the human species has many thousands of live essential genes. Beliefs that hereditary ataxia, Huntington's chorea and other heredodegenerative diseases of the central nervous system are due to single dominant or recessive factors do not agree with results of recent biological research.

The closest human relationship can be studied in so-called identical twins. By this way of investigation it was learned that physical features are more under the sway of heredity, and mental traits more under the power of the environment. Temperament

1. H. Neuer, Lincoln, in *Ill. Med. J.*, Mar.

was shown to have a great correlation with the environment.

The question of heredity has been raised in no other discipline of medicine as often as in neuro-psychiatry, and here a bewildering terminology with multiplicity of connotations renders it the more difficult to give precise and generally understandable descriptions. Further pitfalls of diagnostics to be avoided are mixing biological and psychological concepts and expressing sociological values in medical terms.

The symptomatology of the so-called organic mental disorders gives no clue as to the magnitude of structural changes, and the borderline of normal behavior is drawn in an arbitrary, conventional manner.

Heredity is in the last end a chemical process which cannot be analyzed by methods of psychology which observe how a human being, as an organism-as-a-whole, responds to the environment. Consequently, mental disorders, like the so-called familial mental deficiency and functional psychosis, cannot be assumed to be inherited as long as no steady correlation with structural or physico-chemical peculiarities will be disclosed. In only a few cases can heredity be concluded to be the etiology. In medical practice, usually a suspicion more or less justified will be all that may be claimed.

At the present time, geneticists cannot offer any help to preventive medicine.

Without eugenics, science has progressed, living standards have risen, duration of life has doubled, because the effects of physical, socio-economical and cultural factors of environment have been explored and utilized for the benefit of the individual. For a long time to come, the progress of preventive medicine will depend entirely on the efforts to study the effects of environmental factors on mankind.

The overemphasizing and popularizing of the role of heredity in human society, concludes Neuer, has been done so long and so much as to serve to rationalize the delusions of innate aristocratic, racial and national superiorities and so contribute to tyranny, persecution and war.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., Editor, Chester, S. C.

### CAUSALGIA

THE TERM CAUSALGIA is applied to a severe burning pain in association with vasomotor and trophic changes of an extremity following injury to peripheral nerves. It is not related to the painful amputation stump or phantom limb, or to painful arthritis. Early recognition is the keynote to success in the treatment for delay often leads to

irreversible changes in the wounded part as well as in the psyche of the patient.

So Mayfield<sup>1</sup> opens discussion of a subject which is a matter of concern to most of us. He goes on with a helpful consideration of the subject.

This paper is based on 105 cases observed in military service and a number seen in civil practice.

The incidence of causalgia among the war wounded ranged from 2 to 5 per cent of patients with peripheral nerve injuries. Almost without exception the patient had received a penetrating wound of an extremity.

In many instances there is intense burning pain from the moment of impact. In others the onset of pain is delayed several weeks. Without exception the nerve injury is incomplete and in most cases the median or sciatic nerve is involved. The pain is always referred to the distal part of the extremity but not confined to the skin zone of the injured nerve, though usually it is more intense there. The patient is never free of pain during waking hours. The pain will subside when the patient is quiet. Touching the bed, moving a chair, tearing paper, a draft of cold air, sudden anger, or loud noises evoke an unbearable paroxysm of pain.

During the painful stage many evidences of psychoneurosis are noted; these disappear when the pain is relieved. It is difficult to evaluate the nerve injury because of the patient's protective attitude.

The vasomotor and trophic changes are of two general types. In one type the skin is cold, thin, and glistening, the part sweats profusely, there is almost complete loss of hair, the fingers are tapering, and the nails long and clawlike. In such cases, the application of warm, moist clothes provides some comfort. The development of higher fever, either natural or induced, gives transient relief. In other cases the skin of the affected part is dry, scaly, warm and the hair is long and coarse. Here cold applications are grateful, and the application of heat or the development of fever exaggerates the pain.

X-ray examination usually reveals demineralization, not always spotty, of the small bones of the painful part.

There are a few authentic cases of relief of minor causalgia following periarterial neurectomy. In certain cases the pain will subside with the passage of time, but many patients never recover and go on to irreversible deterioration of personality, permanently crippled extremities and to morphine addiction.

The diagnosis of causalgia can be unerringly made when all the following criteria are manifested: 1) burning pain in an extremity after injury to a peripheral nerve, with vasomotor and trophic

changes in the part, 2) aggravation of pain by emotional stimuli, and 3) instant and complete relief of pain by chemical block of the sympathetic chain, the relief enduring only for the period that the chemical is effective. (Prolonged relief following this procedure should engender some skepticism.)

Interruption of the sympathetic chain results in immediate and complete relief of pain. Certain writers report lasting cure of causalgic pain by single or repeated procaine injections of the sympathetic chain.

Procaine block now is used in our clinic for diagnosis only in causalgia, though the procedure is recognized to have considerable therapeutic merit in certain other conditions.

Having established the diagnosis of causalgia, surgical sympathectomy should be performed. When the seat of pain is in the arm, the conventional preganglionic cervicodorsal sympathectomy of Smithwick is done; for the leg, resection of lumbar ganglia two and three usually is adequate. In occasional instances, due to anomalous innervation, removal of the first lumbar and even the lower dorsal ganglia may be required in order to provide complete sympathetic denervation of the leg.

## UROLOGY

RAYMOND THOMPSON, M.D., Editor, Charlotte, N. C.

### MANAGEMENT OF URINARY-TRACT EMERGENCIES IN GENERAL PRACTICE PART I

URINARY-TRACT EMERGENCIES require judgment and prompt decision and these may well spell the difference between life or death, health or invalidism, for the patient. These emergencies may be classified as follows: acute urinary retention, extravasation, gross urinary hemorrhage, reno-ureteral colic, acute infection, trauma, anuria and uremia.

Of acute urinary retention the causes are many. Diagnosis is obvious by reason of the history of inability to void and finding the patient with a distended bladder. The emergency is treated by catheterization. If this is not possible; as evidenced after careful and gentle attempts with soft rubber catheter, styletted catheter, flexible woven catheter, and filiforms; then introduction of a supra-public drainage tube through a small, low mid-line incision under local anesthesia. Blind suprapubic trocar puncture is a dangerous procedure, even in the hands of experts. It is desirable that a coudé catheter, a soft rubber Robinson catheter, stylette, woven flexible catheter, and fili-

1. F. H. Mayfield, Cincinnati, in *West Va. Med. J.*, June.

1. L. W. Lee & Edwin Davis, Omaha, in *Neb. Med. J.*, June.

forms with followers be kept on hand by each physician located where help is not available.

The so-called "acute neurogenic bladder" is diagnosed by finding the patient unable to void and the bladder distended, with no history of long-standing urinary obstructive symptoms. By means of an indwelling urethral catheter attached to a modified Munro apparatus, tidal drainage should be established. After a week or two of tidal drainage the catheter may be removed and the patient allowed or induced to void. If residual urine remains the tidal drainage should be reestablished for a further period. Several attempts may be necessary before satisfactory emptying is effected.

Extravasation of urine through urinary tract mucous membrane into adjacent soft tissue is soon followed by infection, which rapidly develops into a gangrenous cellulitis. Diagnosis is based on history of urinary retention, and local edema, redness and induration involving the scrotum, penis, perineum and rapidly extending upward within the abdominal wall. The emergency is treated only by suprapubic cystostomy, thereby diverting the urinary stream; and the making of multiple incisions allowing drainage of the tissues involved.

It is necessary to distinguish urinary extravasation from extraperitoneal rupture of the bladder, periurethral abscess and acute epididymitis with scrotal edema.

Ruptured urethra with urinary extravasation carries with it a mortality of 40 per cent; the prognosis may be greatly bettered by prompt treatment—in a matter of hours.

Hematuria should be regarded as a symptom of intrinsic urinary disease until proved otherwise, but never as a disease entity. The most common causative lesions, in order of frequency, were carcinoma of the bladder, benign hypertrophy of the prostate, non-specific cystitis, carcinoma of the kidney, urinary calculus, urinary tract trauma, urinary tract tuberculosis, and carcinoma of the prostate. There are also many systemic causes of hematuria.

The immediate treatment depends upon the site and the rapidity of the bleeding. Patients may be seen with a bladder distended from obstruction due to clots. Clots may be evacuated under low-spinal or caudal anesthesia by passing a cystoscope or resectoscope sheath and aspirating them with a suction syringe or Ellik evacuator. Following evacuation of the clots, if a bleeding point is found, hemostasis is sometimes accomplished by fulguration with a cystoscope, electrode or the resectoscope electrode. Bladder or prostatic bleeding may be so profuse or the bleeding area be so inaccessible as to require emergency suprapubic cystostomy with fulguration or actual ligation of the bleeding point, with or without removal of the lesion from which the bleeding occurs.

Reno-ureteral colic is caused by sudden mechanical obstruction at the ureteropelvic junction, or anywhere along the course of the ureter. Severe flank pain radiates over the distribution of the first lumbar nerve to the lower quadrant, and testicle or labium.

Common causes of this pain are stone, blood clot, stricture, ureteral kinking, and crystal showers. It is necessary to be on the alert for renal and ureteral tuberculosis, renal and ureteral tumor, pyelonephritis, pyonephrosis, hydronephrosis and perinephric abscess in the presence of reno-ureteral colic.

Diagnosis is on typical pain, frequent finding of red cells in the urine (helpful in placing the cause of the loin pain in the urinary tract), although absence of red cells does not rule out.

Treatment of the emergency is by sedation and in some cases ureteral catheterization, which serves to relieve the distention of the renal pelvis.

Diagnosis of the primary, intrinsic urinary tract cause is to be made, as well as differential diagnosis from appendicitis, cholecystitis, neuralgia, neuritis, or radiculitis of the first lumbar nerve, on the basis of the history, physical findings, and complete urological study consisting of cystoscopic examination, ureteral catheterization, x-ray examination of the abdomen, and retrograde pyelographic study.

## DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

### SEVERE INFECTIONS OF THE MANDIBLE

IN THIS REVIEW<sup>1</sup> of over 150 cases the relative merits of surgery and penicillin are evaluated.

Acute infections of the soft tissues rapidly spreading cellulitis of the neck commonly result from localized infections arising from some dental cause. The removal of mandibular teeth will not drain or stem the advance of an acute infection which has passed from the roots of the teeth. The correct treatment of all these abscesses in the early stages is heat externally and intra-orally. When the presence of pus is established a submandibular incision is made for good dependent drainage.

This treatment in the past has produced excellent results. Nowadays the use of penicillin early prevents many an acute abscess, or a severe bone infection. Preference is for dependent drainage for a short time rather than a primary suture. The cause must be removed after the acute infection has subsided.

Infection giving rise to alveolar abscess does not often invade the bone to a great degree, but passes rapidly out of the bone into the soft tissues. The

1. D. G. Walker, in *Proc. Royal Soc. Med., London*, April.

use of penicillin systemically without surgical interference is the method of choice. Surgery is not indicated apart from the possible treatment of a residual infection. Cases not seen early will need treatment for some residual infection. Penicillin used in these cases will, however, limit considerably the extent of the infection.

The treatment of acute abscesses and acute bone infections in children is similar to that for adults, but there is special need for establishing early dependent drainage. If the infection is allowed to continue the inevitable result is a maldevelopment of the affected portion of the jaw, producing a pathetic deformity in an otherwise normal child. The response of the young bone to infection is usually good and the same holds true for the reaction of the teeth to such an infection. Penicillin is indicated in these cases and surgery reserved for any residual infection. When it is necessary to perform a sequestrectomy great care should be taken that the new bone be not removed nor the vital teeth disturbed.

The commonest causes of local infection are a dead tooth or a retained root; frequently there results an intra-oral, less often an extra-oral, sinus. There are other causes for which the teeth have been extracted and the socket has undergone varying degrees of necrosis even to a pathological fracture. The remaining portions of teeth and dead bone must be removed, preferably by intra-oral operation. Penicillin should be given systemically. Where a good debridement has been performed suture of the wound is preferable to leaving it open.

In cases of chronic infections of the mandible involving a diffuse area sequestra and teeth have been removed on a number of occasions with no improvement. In such cases extensive submandibular incisions are essential to open all areas of infection. In these cases when the mandible is sclerosed penicillin's benefit is doubtful. On rare occasions reaction to infection is nil. There is little that we can do when there is no response on the part of the bone.

Of chronic infections involving the condyloid and coronoid processes and the temporomandibular joint there are two main types of cases both of which eventually produce an ankylosis of the temporomandibular joint. The one is an ascending infection which starts in the region of the third molar and for some reason or other extends upwards. The other appears to originate from middle-ear infection and to spread towards the joint, condyle and coronoid process. The treatment in these cases is twofold. In the first instance any source of infection must be removed and the ankylosis treated by extensive removal of the upper portion of the ramus together with its two processes. The ma-

jority of cysts cause little difficulty, but the solitary cyst involving the ramus, when infected, can be very troublesome. Trismus in the acute stage prevents early operation and in such cases penicillin is very helpful. The operation for these cysts lying high in the ramus is by no means a simple problem. There is a tendency for recurrence, particularly of the infection, if the orifice of the cyst is not kept patent with a skin graft.

Infections occurring in bone affected by some pathological disease—limited to the mandible. A patient has a tooth removed and some infection follows, after the acute stage a long process of very low-grade infection producing sclerosis. It is doubtful if penicillin is of much value, but one hesitates to tackle the problem surgically. As these conditions occur in older patients the natural trend is to avoid surgery if possible.

Infection occurring in bone that is already affected by some pathological disease—not limited to the mandible. In the early stages of the acute bone infection penicillin has no effect, but later in the treatment the patient develops a severe submandibular infection rapidly controlled by penicillin.

In cases of actinomycosis penicillin offers advantages. Surgical measures are confined to incising abscesses or less often to a debridement when the mandible is involved. The method of choice in most of these cases is a combination of x-ray therapy and penicillin.

It is premature to lay down hard-and-fast rules regarding the optimum doses of penicillin.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### "HOUSE BILL NO. 461": THE PRACTICAL NURSE BILL

FOR a long time, the lay public has suffered for the lack of nurses and doctors. The situation became especially acute during World War II, and this acute condition has not yet been improved noticeably. The solution is the responsibility of the medical and nursing professions, but neither of these groups will admit their responsibility in the matter. It is seldom that a criminal will frankly admit his guilt and take his punishment without murmuring. It is usual for one's case to be passed upon by a jury of 12. Where there is no definite legal status, public opinion is jury and judge. It is before this bar of justice that these two professions now stand. The public has been lenient, long-suffering and patient concerning the medical and nursing service scarcity. Ill people have waited patiently hours and even days for a physician to render them professional service. The same patients

have waited weeks and many times gone without nursing service.

If public opinion expresses itself vigorously now through legislative means it would be unbecoming for the members of these two professions to cry out. Too many people know of the deplorable lack of opportunities for the young man or woman to study medicine or become a nurse.

The author has repeatedly heard those who are directly responsible for accepting candidates in medical and nursing schools speak with pride of the large number turned down and refused an opportunity to get a professional education; of "standardization for the promotion of better medical and nursing service." In truth it is standardization for the elimination of a larger percentage of all medical and nursing service.

In writing this article I have in view principally two groups of individuals. One group represents those who would seek to remedy a bad situation—that is the scarcity of nursing service. The other group includes those who have persistently dictated the terms and policies of the graduate nurses' curriculum, conduct and service. Public opinion, however, has stimulated action for the improvement of these services. Let us see how this law works.

The bill calls for the creation of a committee consisting of three graduate nurses, appointed by the North Carolina Graduate Nurses Association; four representatives appointed by the North Carolina Hospital Association; and three nurses appointed by the North Carolina Practical Nurses Association. This committee cannot dictate the terms and policies under which a hospital may conduct a school of practical nurses of a one-year term. It is to work in conjunction with the board of examiners which consists of three members from the North Carolina Nurses Association; one member from the North Carolina Hospital Association; one member from the Medical Society of the State of North Carolina, and three members from the North Carolina Practical Nurses Association.

This is a large and cumbersome number of individuals, and careful scrutiny makes it evident that the individuals particularly concerned have a minority representation. No practical nurse is, or can become a member of the North Carolina Hospital Association, nor the Medical Society of North Carolina. But the graduate R.N. may become a member of the North Carolina Hospital Association, and the fact is that a large majority of the voting membership has in the past been graduate nurses. There will be little change in the future unless drastic measures are adopted in the Hospital Association's rules.

The writer has repeatedly seen nominations brought up and voted upon where a group of stu-

dent nurses, brought in by some nearby hospital, have voted honor and authority upon some graduate nurse in the association, while a doctor or business administrator was defeated. An attempt has been made, how successful it has been is not known as yet, to overcome this weakness.

What we see in this new law is that the graduate nurses almost entirely control the appointment of eleven members to this governing board, which has special control over the training of practical nurses. They may have, and in many instances in the past have had, the voting strength to elect five other members to this governing board. The Practical Nurses Association cannot possibly have more than six members—a number far short of a majority. And, it is to be noted, it is their association and not the graduate nurses association.

There are many doctors and nurses who are not responsible directly for the deplorable condition in which we find ourselves at the present time. But we are, as a group, going to suffer the loss of prestige, confidence and faith of the lay public because of a very few narrow-minded, short-sighted, misinformed, egotistical, selfish members of the groups.

It is greatly to be hoped that broad-minded individuals will be placed upon this Standardization Committee who will recognize the need of service and be willing to render this service over and above all selfish interests of any training group or any institution.

The legislature which passed this law did so believing that it would relieve to a great extent the nursing shortage. If it does not, it is not fulfilling the intent of the law; and they probably, because of public opinion, will create another law in the near future which will take away from the professional group all authority in so far as nurses and doctors are concerned. The author of this article hopes and prays that from this day henceforth we doctors and nurses will see our errors, mend our ways and return to our rightful, honored and respected position in the citizenship of this world.

#### SUDDEN DEATHS OF YOUNG MEN

(A. R. Moritz, Boston, & Norman Zamcheck, Med. Corps, A. U. S., in *Arch. Path.*, 42:459-494, 1946)

Among more than 40,000 autopsy protocols received by the Army Institute of Pathology 1942-1946, 1,000 record the unexpected sudden deaths of apparently healthy men between the ages of 18 and 40. Physical examinations made before death, in the majority just a short time before, had disclosed no potentially fatal condition.

Diseases most commonly listed as the causes of death in these cases were heart disease, intracranial hemorrhage, and meningococcemia. Coronary arteriosclerosis with or without demonstrable thrombosis was the most frequent cause of heart failure. Fatal intracranial hemorrhage was usually produced by rupture of an aneurysm of the circle of Willis. The leading contributing factors in meningococcemic deaths were degeneration of and hemorrhage into the adrenal cortex.

Miscellaneous causes of unexpected death were headed

by bronchopneumonia. Usually the interval between onset and collapse was a few hours. Other causes were adrenal atrophy, aortic rupture, diabetes mellitus, diphtheria, encephalitis, glioma, hepatitis, intestinal obstruction, meningitis, pancreatitis, obstructive pharyngeal laryngitis, pneumonia, septicemia, thrombophlebitis with pulmonary embolism.

Careful investigation, post mortem, in 140 cases revealed no reason for death. The most common evidence of disease was cardiac hypertrophy. In only one instance (a case of diffuse vascular disease) did the heart exceed 450 gm. in weight.

## GYNECOLOGY

ROBERT T. FERGUSON, M.D., *Editor*, Charlotte, N. C.

### PRACTICAL HORMONE THERAPY

GRAY<sup>1</sup> has written an article which justifies its title. Our readers will be pleased and profited by studying it.

The characteristic symptoms of the menopause is the hot flash. If a woman complains of nervousness with absence of hot flashes the results of treatment may not be drastic. Other symptoms include nervousness, irritability, crying spells, numbness and tingling, a feeling of crawling on the skin, various aches and pains, lack of concentration, insomnia, and arthralgia. If such symptoms are present and the patient has a vagina of normal thickness, indicating a normal estrogenic hormone level in the blood, treatment with estrogenic hormone will give no real improvement. The symptoms in such cases are usually from an anxiety state.

The estrogenic hormones in their natural combinations have remarkable estrogenic effect when taken orally. No toxic symptoms have been encountered. A preparation of conjugated estrogens (now marketed as Premarin and Conestron) apparently will raise the estrogen blood level to normal by the administration of one tablet daily orally (containing 1.25 mgm. estrone sulfate). Such a result can be demonstrated by inspection of the atrophic vagina after a week of treatment. At the present time it appears that hypodermic medication of estrogenic hormone is not necessary in any condition.

Apparently hyperestrinism may produce nervousness and irritability but not hot flashes. In the group of premenopausal patients where the ovaries seem to be in a state of terminal hyperfunction, often associated with meno-metrorrhagia, the estrogenic level may be diminished and neutralized by testosterone propionate parenterally in doses of 25 to 100 mgm. weekly or bi-monthly.

There remains one real problem. When the hormone has been given in sufficiently large doses to reach the bleeding level in that individual, uterine bleeding may follow—a real concern. One must not forget the dictum that any abnormal bleeding is

cancer until proven otherwise. If the bleeding stops in seven to 10 days after cessation of treatment, treatment may be resumed at a lower dosage level attempting to stay under the bleeding level of that individual; if the bleeding continues for two or three weeks, or if it recurs, a curettement must be performed with microscopic studies of the endometrium. There is no evidence to prove that estrogenic hormone may produce carcinoma in women. It is agreed, although unproven, that because of possible stimulation and increasing rate of growth of existing carcinoma, women with genital carcinoma should not receive estrogens.

Cessation of estrogenic hormone is associated with atrophic vaginitis and consequent burning discomfort and dyspareunia. In addition there may be hot flashes for 10 or 20 years, diminished vitality and intellectual vigor and some loss of emotional stability, marked thinness of skin on the face and hands and loss of fat pads. The tonic effect of estrogens in geriatrics, including women in their late 60's and 70's, with eradication of burning discomfort and urinary frequency of associated senile vaginitis make it appear that estrogens will be used widely in such elderly people. However, these cases of women who have had no estrogens for many years do not give the dramatic response of the young women who have been only recently deprived of all estrogens. It seems likely that all women will desire to take estrogens for many years after the menopause to prolong their youth and sexual maturity. It is our practice to continue the hormone indefinitely with the onset of the menopause, with examination of the breasts and pelvic organs every four months.

## PEDIATRICS

### THE TREATMENT OF THE CHRONIC CONVULSIVE DISORDERS

TWENTY-FIVE YEARS AGO barbiturates were hailed as the solution of the problem of convulsions. A quarter-century of experience has shown the barbituric acid derivatives to be valuable additions to our remedies, but this experience has cut down the claims by three-fourths, and brought us back to realization that our old standby before barbiturates, sodium bromide, is still the most useful remedy in some cases of convulsive disorders.

The substance of a report by Graves<sup>1</sup> will prove profitable reading.

The best agent for major convulsions is dilantin, usual rose 0.1 Gm. (1½ grain) capsule three times a day after meals. In severe cases a total of 0.5 Gm. in 24 hours may be required. The toxic effects of dilantin include giddiness, ataxia, skin rash and

1. R. W. Graves, Durham, in *N. C. Med. J.* for March.  
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*As is true of most Medical Journals, all costs of cuts, must be borne by the author.*

## THE CONTINUING ILLS OF MEDICINE

NO INTELLIGENT DOCTOR can view with complacency the prospect for the future of the practice of medicine in our country. This journal has expressed itself fully and frequently on this subject, without quoting from other journals. Now it will pass on to its readers the opinions of a number of others in various parts of the U. S.

A Maine practitioner<sup>1</sup> offers facts and mature opinions which all will do well to ponder.

For the "high cost of medical care" who is to blame? There are pros and cons for state medicine, and group practice is offered as a solution by some. The public is vitally interested but confused.

The crux of the present difficulty in rural areas and in the city is that the American Medical Association is to blame for the near extermination of the general practitioner.

No doctor should be permitted to become a specialist until he has served five years as a general practitioner.

The campaign of the A. M. A. to eliminate all medical schools which did not meet fantastic requirements resulted in closure of most of the schools in the United States. Only schools in larger cities could survive. Bowdoin Medical School, the only one in Maine, was squeezed out of existence. Vermont almost lost its medical school at the same time but chose to tell the A. M. A. where to go. As a result, the State of Vermont has been able to keep up its supply of general practitioners, while the people in Maine see that no great numbers of new doctors are coming into the State. The old ones are dying off rapidly, and the present average age of the doctor in Maine is over 50 years! In Maine efforts are being made to resurrect the old medical school.

The pauper in New England can obtain medical care. The old town meeting form of government still works. The unfortunate victim of accident or illness will not stay a pauper if he can help it. He may "call on" the town manager, or the first selectman sends a doctor, guarantees the bill. When the man is able to pay again, he pays the town. While he is "on the town" he does not vote.

Today most people decide which specialist should see his or her case. A man or woman may go to six or seven different specialists before finding an answer. A single trip to a competent general practitioner would have saved him or her the expensive fees the several specialists charged.

The general practitioner is competent to manage the vast majority of cases when there is something wrong on the skin, under the skin or somewhere inside the skin as a whole. He regards the skin and its contents as a whole person. When he refers a patient to the specialist, the patient is lost to him.

The veterans who are to be patients of the Veterans' Administration are to be treated by specialists. There is a 25 per cent increase in pay for one approved by the Specialty Boards of the A. M. A. and the rank given to the specialists is higher.

There is too much hocus-pocus about specialists even if the Army, the Navy, the Public Health Service and the Veterans' Administration have been built up around the concept as laid down by the A. M. A., which has operated to bring the general practitioner, and medicine as a whole, of which he is the foundation, to the present serious threat to their very existence.

It looks as though we would do well to provide medical care for our paupers just as is done in Maine, and to frankly call them paupers. Most likely this would work out well, as Dr. Thomas says it does in Maine. Sound sense have those State of Maine men. "When he is 'on the town' he does not vote." Our sob-sisters—of both sexes—at Chapel Hill would wail to high heaven, but what of it?

This Maine doctor is not, as a good many will surmise, a 75-year-old graduate of Bowdoin; he is a little past 50 years of age, and a medical graduate of Columbia.

It may be worth while to comment that for the last year for which we have full reports, Maine's mortality rate is considerably less than Vermont's.

The editor of a great medical journal in the Northwest writes<sup>2</sup> to the point on the nursing situation.

The report of the Committee of the American Surgical Association undoubtedly represents the opinion of the medical profession at large on this trend in the nursing field. It is generally believed that a year of training in nursing will qualify a young woman of average intelligence to render competent bedside nursing at home or in the hospital. The one-year graduate cannot take the place of the three-year trained nurse in the care of the seriously ill. The three-year course also is a requisite for further study and training for a Master of Nursing degree, qualifying for teaching and other positions of special responsibility.

Through the coöperation of the nursing and medical professions of Minnesota, a bill providing for the certification of practical nurses after a year of training was recently passed by the state legislature, thus adding Minnesota to the list of 20 other states that have passed such a law.

The next step will be the establishing of training schools for practical nurses. The National League of Nursing Education and the American Nursing Association have declared themselves opposed to the establishment of training schools for practical nurses in conjunction with training schools for registered nurses. On the other hand, there are a num-

ber of nurses' training schools which have been forced to close because they could not meet the requirements established by the national organization of nurses. These schools might well be opened for the training of practical nurses. It should not be unreasonable to expect that the national nurses' organization will aid rather than obstruct the steps proposed to train practical nurses.

The training of practical nurses is of necessity a function of the nursing profession. The medical profession in the past has left the training of nurses to that profession. However, the public, the hospitals and the physicians are vitally concerned and are now entering the picture. To meet the situation a Minnesota Advisory Committee on Nursing has been formed, composed of representatives of the Minnesota State Medical Association, State Hospital Association, State Nursing Association, State Board of Health, State Board of Nursing Examiners, Farm Bureau Federation, State Institutions, State Department of Education, and Catholic Hospitals. This committee has sent out a questionnaire to hospital superintendents to obtain vital information in regard to facilities for training more nurses.

The coöperation of individual physicians, as well as the State Medical Association, in furthering the establishment of training schools for practical nurses, is assured.

There is a rapidly growing tendency of hospitals to insist on board certification before acceptance to staff appointment.

The absurdity of making 33 to 34½ months of training requisite for the granting of the R.N. degree, while only 28 to 30 months sufficed for the M.D. degree has recoiled on the heads of the doctors who made that requirement in order to get twice as much free nursing service for their patients as would have been realized had the course in nursing been no longer than was (and still is) needed.

The official spokesman for the doctors of Indiana has something pertinent to say.<sup>3</sup>

Attention has been called recently to five principal reasons given by men, applying for medical licensure, for their decision to specialize. Application of knowledge already acquired in specialized work, more remunerative practice, less arduous type of practice, attitude of hospitals in staff appointments, and prestige of the specialist were the condensed reasons given; not one, apparently, having to do with the elevation of the standards of a specialty or the welfare of the patient, but all having to do with purely personal advancement. Only 10 per cent of the number expressed the desire to go into general practice.

One might well question, therefore, whether the creation of the specialty boards has not produced a device that will ultimately destroy the general

practice of medicine unless measures are found to block the tide of impositions, regulations, and unfair practices stemming from the assumed superiority which certification in a specialty appears to be producing.

Medicine finds itself in a centrifuge of disintegration. The component whole is being fractionated into specialties, and the general practitioner is being settled out as waste material. Such a condition cannot, and undoubtedly will not, be allowed to persist. Organization, aggressive representation, adequate and equal recognition, competent and fair administration, and impartial use of physical facilities for the care of the sick must be the aims of any group of practitioners who would consolidate to balance the wheel and correct growing injustices in medical practice. Such an organization has already been formed. It is known as the American College of Physicians and Surgeons.

The Indiana medical editor goes on, quoting from an editor of a leading newspaper of that State.

"It is small wonder, then, that most doctors want to specialize.

"As skills increase so do the opportunities for a lucrative practice. Specialists tend to gravitate to the cities, where there are ample facilities for their work and where patients are likely to be more prosperous as well as more numerous. This trend threatens the field of general practice. The young men specialize and go to the city. The rural community's health becomes the responsibility of a few old-timers.

"In cities, too, it is often difficult to find a general practitioner. There are specialists galore. But, outside of crowded clinics, it is sometimes a real feat to get a general examination or treatment for a minor ailment.

"There is a real need, in this troubled world of apprehensive people, for a modern counterpart of the old-fashioned family doctor.

"The general practitioner of grandfather's day may have been ill-equipped in science. But, if he was a good doctor, he had something that is lacking in many of his learned successors today.

"We are sure there is a real need today for the kind of doctor who used to be able to bring an anxious household a feeling of reassurance the moment he came in the door."

Either we must return the family doctor to the people, or the people will seek relief through some kind of state medicine.

In recent years there has been a decided tendency toward overspecialization in the medical field.

In the nursing profession educational requirements for certification of registered nurses have been increased to the point that a high school

diploma and three years of training in a nursing school is the minimum, and two years of college work and three years in a training school are required in certain schools. As a result a patient is required to have what amounts to a specialist if he is to have the services of a trained nurse.

There has been a conviction for sometime that such a long period of training is not essential to produce an efficient bedside nurse. While the longer period of training is desirable for turning out trained nurses who can qualify as supervisors in hospitals, instructors in nursing training schools, anesthetists and the like, any young woman with average intelligence should be able to learn enough of the practical to care for all but the seriously sick at home or in the hospital.

Opportunities for young women to obtain well-paid jobs without spending years in training have resulted in a lower enrollment in nursing schools. In 1946 only 31,000 were enrolled in the nursing schools of the country, as compared with 39,000 in 1938. The lack of nursing personnel has forced the hospitals to abandon 33,000 beds. The situation has become so serious that at least 21 states have passed legislation providing for certification of practical nurses who take a year's training in bedside nursing. This should enable the many hospitals which have been forced to close their nursing training schools because they were unable to meet the high requirements by the national nursing organizations for the training of registered nurses, to open schools for the training of practical nurses.

With the medical profession overspecialization is even more marked. From 1939 to 1946 the number certified as specialists by the various boards had been *increased six-and-a-half times*. A survey indicated that 12,000 physicians in the armed forces planned to seek certification.

The attention of the organized doctors of Washington was attracted to the Minnesota editor's pronouncements on the subject, so he was invited to our capital city for an address,<sup>4</sup> from which are derived our concluding paragraphs.

It is generally admitted that 85 per cent of medical ills can be cared for efficiently by the general practitioner. It is evident that we are about to have in the near future a much greater percentage of specialists than is required. As a result the specialists will gravitate to the centers of population, cut-throat competition will develop to the detriment of high-grade medical practice. Large numbers will be forced to take up country practice for which they are not prepared and will have been subjected to great unnecessary expense in their training for the specialties. The answer is that the training of specialists should be curtailed and that promptly.

This overspecialization in the nursing and medical fields raises the cost of illness unnecessarily at a time when every effort should be made to reduce it so that medical care may be made more available to those having low income. The training of practical nurses and general practitioners by means of courses specially adapted to present needs is of the utmost importance.

1. W. B. S. Thomas, Dover-Foxcroft, Maine, in *Jl Maine Med. Assn.*, June.

2. Schools for Practical Nurses, Editorial in *Minn. Med.*, May.

3. The New Deal in Medicine, Editorial in *Jl. Indiana Med. Assn.*, June.

4. Overspecialization, C. B. Drake, Editor, *Minnesota Medicine*, in *Med. An. D. C.*, June.

## CHILDLIKE FAITH IN THE OMNIPOTENCE OF MONEY

THE EVIDENCE is abundant that those who determine our destinies in the national and state capitals are, in the great majority, a very immature lot mentally. In no other way do they demonstrate this more than in the confidence they show that, however complex the problem, all that is necessary for its prompt solution is the appropriation of some millions or billions of dollars.

With the passage by Congress of legislation more than tripling appropriations for research and control of cancer, and bringing next year's budget of the National Cancer Institute at Bethesda, Md., to the enormous sum of \$14,000,000, the U. S. Public Health Service announces plans<sup>1</sup> for an expanded attack on the cancer problem.

Support is now to be extended to universities for more elaborate cancer research and training programs looking to finding the cause and cure of cancer. A total of forty-six project grants, amounting to \$594,348, has been made to widely scattered groups. Thirty-five institutions in twenty-three States are recipients of large sums. Of these thirty-five institutions, eight are State universities; seven are universities other than State; five are hospitals; and the remainder includes laboratories, research foundations, technology institutes, medical schools not departments of universities and one small college. Apparently, those having in their hands the disposal of these funds are extending aid to any and all who can show any promise of advancing our knowledge of cancer by even a short step; and for this they are to be commended. At the same time the Institute is greatly enlarging its own research program at Bethesda, where there will be increased emphasis on clinical research.

Four million dollars of the increase in NCI's budget will go—not to research—but to the States to increase the effective use of present methods of diagnosing and treating cancer. It is estimated that while a fourth of cancer patients are cured today, another fourth could be cured if they received early treatment.

1. News Notes, U. S. Public Health Service, July 7th.

Within the past month a nation-wide campaign was carried out, and we were told in letters a foot high that cancer would continue to kill us at the present appalling rate "unless checked by your contributions." Greater faith hath no man. And some might be so unkind as to say, nor greater dishonesty.

It is implied that by the expenditure of these four millions "another fourth" will receive early treatment and be cured. There is little reason to believe that this is true, the reason being the failure of cancer to call attention to itself, or to manifest itself to even painstaking scrutiny early in its course. All informed doctors of medicine know that a great number of pathologists, radiologists and surgeons distinguished for clinical and research work on cancer have died of cancer. If the great Welch could not diagnose cancer in his own person early enough to have it cured, how can we believe that the appropriation of large sums of money will bring about a very material change in cancer mortality?

Unhappily, we do not know what has kept our great medical scientists and clinicians from learning how to reduce cancer to a minor role as a killer; but have no idea whatever that it has been lack of money that it is not a lack of money.

Have all of us become as untruthful and as sensational as our advertisers?

Last month we were informed<sup>2</sup> that Army engineers are to build the greatest medical research center in the world at Forest Glen, Maryland. The center, we are told, will be equipped to anticipate and meet the medical problems of the future as well as to cope with those of the present. The initial cost is estimated at \$40,000,000.

The project is to consist of a 1,000-bed general hospital, capable of expansion to 1,500 beds; the Army Institute of Pathology building; the Army Medical Museum and Center Administration building; Central Laboratory Group buildings; and the Army Institute of Medicine and Surgery. A working library, animal farm, quarters for the staff and other buildings are included in the plans.

Located just outside of Washington, the new Army Medical Center will have the advantage of close relationship to the Walter Reed General Hospital, the Naval Medical Center, the medical schools of the District and the proposed new Washington Medical Center. Distinguished physicians and surgeons in practice in Washington, and medical experts from other Government departments, will be available for consultation. The Center will also cooperate with the National Bureau of Standards, the National Institute of Health and the National Research Council.

It is planned that 200 beds shall be designated

2. News Notes, Office of the Surgeon General, Technical Information Division, Washington.

research beds and that these be so located as to be readily accessible to research activities of the various institutes and central laboratories. However, they will remain an integral part of the hospital for service and patient care. In the future expansion, a proportionate number of beds will be reserved for research.

### PSYCHIATRY FOR THE GENERAL PRACTITIONER

A KENTUCKY PSYCHIATRIST<sup>1</sup> has recently written practically and sensibly on the aspects of psychiatry of most interest to the family doctor; that is to say, how to recognize mental disorders in his patients and how to go about doing what is best for them.

The patients are considered in two groups: 1) those who are acutely disturbed and 2) those in whom abnormal quietness or withdrawal is the paramount symptom.

In the first group may be found the manic phase of manic-depressive psychosis, the excited catatonic, or the paranoid type of dementia praecox, post convulsive confusional state, central nervous system syphilis, the deliria and many other transitory excitements.

A calm, reassuring attitude on the part of the physician will generally allay fears which would be increased threats or ungentle handling. The physician should at once examine for any evidence of injury or neurological findings which might give a lead as to the underlying cause. Observing the patient in his excitement will show whether he is paralyzed or weak in one area or the other, whether or not he is aphasic or has a slurred or thickened speech.

The obvious need in this group is for rest, but this is often not possible without medication. Of all drugs the most desirable is chemically pure paraldehyde. It has a wide margin of safety; it does not store up in the body as the bromides or the barbiturates do; it may be repeated as often as necessary, and it may be given by mouth, by rectum, intramuscularly or intravenously. The usual dosage by mouth is one dram, up to four drams with safety. The same amount may be used intramuscularly, double that amount by rectum in oil. One dram may be given intravenously as it comes from the bottle without sterilization, given fairly slowly until the desired relaxation is obtained. A cough upon initial injection should not be cause for alarm. Morphine, intravenous sodium amylal or other barbiturates have been used, but it is well to remember that a four-ounce bottle of paraldehyde should be in every physician's medicine bag. Other soothing measures are a warm tub bath, or wrapping in sheets wrung from cold water.

1. Wm. K. Keller, Louisville, in *Ky. Med. J.*, June.

Often patients can be coaxed into taking fluids. This also applies to feeding. Some patients have beliefs that food or drink is poisoned. Intravenous fluids may be required. Occasionally it is necessary to feed by nasal catheter or stomach tube giving  $1\frac{1}{2}$  pints of milk and cream, an egg, a tablespoonful of sugar, and one half of a teaspoonful of salt. Normal bathing, care of the teeth and elimination should be assured.

Since the most important emotional reaction in a delirium is fear, a reassuring atmosphere is essential. Have some dependable member of the family about *at all times*, and have the patient in familiar surroundings on the first floor. During the night when shadows are most likely to be misinterpreted, the lights should be kept full on. Unusual noises or flapping curtains in the window are to be avoided.

One of the common forms of delirium is that caused by the taking of bromides. The administration of sodium chloride is the best treatment, with adequate fluids to help in the absorption. There is consistent correlation between the amount of bromide ingested and the rash on the skin.

The abnormally quiet or withdrawn patient does not often see the same emergency to the family, but often he is as sick, if not more so, and capable of catastrophic actions.

Allow these patients to talk about their difficulties. Deal with them in a straightforward way, with no subterfuge; a common mistake is to agree with their beliefs or delusions.

This group of persons consists of those in the depressed phase of a manic depressive psychosis; those in a paranoid state, a catatonic stupor, involuntional melancholia; those having central nervous system syphilis, brain tumor, or a stuporous delirium. Those in the depressed phase of manic-depressive psychosis are all potentially suicidal.

There is no greater fallacy than to believe that a patient who talks about suicide will not do it. Someone should be with him 24 hours a day, alert and completely able to prevent any suicidal attempts. All sharp instruments should be taken away, as well as toxic medicines. The small metal clamp holding the bottom of a toothpaste tube together has been used by a patient to sever both radial arteries. Another patient was able to cut through an artery with one card from a deck. Crochet needles, scissors and razor blades are excellent suicidal instruments.

The most auspicious time for suicide is early morning, twilight next, and shortly after midnight is next. For those who have difficulty going to sleep paraldehyde is the choice, next some of the barbiturate compounds, such as seconal or nembutal, which are fast-acting. If troubled with waking during the night, tuinal or amytal is better. For dawn

awakening, give late at night slow-acting, amytal or veronal.

The feeding problem in these patients is oftentimes the same as in the excited type; if possible, they should be made to look upon food as medication and take it as such, although their appetite be nil.

With the newer methods of treatment by electric shock or modified insulin therapy, the prognosis in depressions is much more hopeful.

A word about two other conditions.

First, menopausal psychosis or involutional melancholia is in the nature of an agitated depression with suicidal drives and occurs at the menopause. It seems to her now that she is no longer capable of retaining her feminine charm or reproducing; she is on the shelf. Glandular therapy will not cure the involutional melancholia. It will help the physical symptoms and, in some degree, the nervousness. The psychosis usually requires hospital care.

Aside from those women who have postpartum infections and as a result a toxic delirium, we see sometimes either a true dementia praecox or a manic-depressive psychosis occurring after the birth of a baby, and usually in women who, in spite of their loud protestations to the contrary, really do not want a baby. In these disturbances the treatment must be symptomatic, directed by the physician in charge until such time as he feels the need for or can obtain some specific psychiatric help.

In so-called functional illness if the physician is honest with the patient, is sincere in his belief that the patient is sick and in need of help, with what seems to the patient an insurmountable problem, that physician is going to get better results than the man who quickly damns a patient by calling him neurotic.

He must allow this human being to pour out his troubles in his own words, must be willing to make a complete examination and be able to formulate in commonsense language his idea of the patient's difficulty. He must be willing to let the patient share the responsibility for helping himself. Accepting him as a sick person who needs his help and one whom he is more than willing to aid with every method at his disposal. The physician must be courageous enough to not give medication simply because the patient presents symptoms. Above all we must never set ourselves up as moralists.

For the milder psychiatric disabilities, give them confidence in themselves by establishing their confidence in you. Give them reassurance by an honest effort to understand their difficulties. Do not subject them to unnecessary diagnostic procedures.

## NEWS

### DUKE UNIVERSITY SCHOOL OF MEDICINE

Resigning his position as instructor in the Duke University School of Medicine, Dr. E. G. Goodman will return to Wilmington to undertake the practice of internal medicine, allergy and hematology beginning July 1st.

A native North Carolinian, Dr. Goodman was graduated from Leland High School, received the B.S. degree of Doctor of Medicine from Duke University. He interned at the Doctor's Hospital, Washington, D. C., the North Carolina Sanitarium, Highland Hospital, Asheville, and has been a member of the Duke Hospital staff since 1940. He holds membership in the Durham-Orange County Medical Society, the North Carolina Medical Society, the Southern Medical Association and the National Board of Medical Examiners.

Dr. Goodman is the son of the late Dr. E. G. Goodman, Sr., who practiced medicine for many years in Brunswick County.

Three members of the Duke University School of Medicine faculty have been appointed as expert consultants to the Surgeon General of the War Department. Dr. J. Lamar Callaway, professor of dermatology and syphilology, serves as consultant in dermatology; Dr. Elbert L. Persons, assistant professor of medicine and director of student health for men, is consultant in medicine; and Dr. Barnes Woodhall, professor of neurosurgery, acts in the capacity of consultant in neurosurgery.

The three physicians were employed through the medical consultants division of the office of the Surgeon General and are required to spend one day out of every two-week period at Fort Bragg where they conduct clinics, give lectures and make ward rounds.

Drs. R. Burke Suitt, Leslie Hohman and Robert Graves have been appointed to the Mental Hygiene Committee of the Medical Society of the State of North Carolina, with Dr. A. B. Choate of Charlotte as chairman. Other members of the committee are Drs. David Young, Raleigh; Lloyd Thompson, Winston-Salem; J. F. Owen, Raleigh; and H. R. Parker, Greensboro.

### Promotions

Dr. L. D. Baker—Professor of Orthopaedics  
Dr. J. L. Callaway—Professor of Dermatology and Syphilology

Dr. Robert Graves—Professor of Neurology  
Dr. Barnes Woodhall—Professor of Neurosurgery  
Dr. Philip Handler—Associate Professor of Biochemistry  
Dr. J. S. Harris—Associate Professor of Pediatrics  
Dr. B. Black-Schaffer—Assistant Professor of Pathology  
Dr. D. G. Sharp—Assistant Professor of Biophysics in Experimental Surgery and Biophysicist to Duke Hospital.

Dr. J. T. Cuttino—Associate in Pathology  
Dr. Max Schiebel—Associate in Surgery

### New appointment

Dr. George Margolis—Associate in Pathology

### VIRGINIA HOSPITALS STAFF ADDITIONS

Dr. Joseph E. Barrett, Virginia Commissioner of Mental Hygiene and Hospitals, has appointed Dr. Isaac C. East as clinical director of Eastern State Hospital, Williamsburg, and Dr. Hugh Moir to be senior physician at Southwestern State Hospital, Marion.

Dr. East formerly has been with the New Jersey State hospital system, while Dr. Moir is from Toronto, Canada. With extensive backgrounds in psychiatric and mental hospital work. Both served in their respective countries' Army Medical Corps during World War II.

## ADDITIONS TO LONG HOSPITAL STAFF

Dr. M. O. Beebe, Jr., and Dr. John Davis are recent additions to the staff of the H. F. Long Hospital, Statesville. Dr. Beebe is a graduate of Rush Medical College, Chicago, and has been in the U. S. Army the past five years. Dr. Davis, whose home is in Charlotte, is a graduate of Davidson College and of Jefferson Medical College, Philadelphia. He has just completed a year's internship at Charlotte Memorial Hospital.

## UNIVERSITY OF VIRGINIA

Dr. Edwin Burton, Professor of Ophthalmology, spoke May 9th before the staff of the New York Academy of Medicine in the 100th Anniversary Meeting on "Heredodegenerations of the Macula."

The following faculty members were on the program of the meeting of the Federation of American Societies for Experimental Biology in Chicago May 18th to 22nd:

Dr. William F. Kremer: "Blood Pressure Changes in Response to Electrical and Chemical Stimulation of the Cerebral Cortex."

Dr. E. L. Corey, Associate Professor of Physiology: "Texts on Explosive Decompression."

Dr. S. W. Britton, Professor of Physiology, and Dr. V. A. Pertzoff (by invitation): "Comparative Effects of Positive and Negative Accelerations."

Dr. Stephen Ludewig, Dr. Alfred Chanutin and Dr. Erland C. Gjessing (by invitation): "Fractionation Studies of the Plasma Proteins of Control and Injured Rats."

Dr. Erland C. Gjessing (by invitation) and Dr. Alfred Chanutin, Professor of Biochemistry: "Fractionation Studies of the Serum Proteins of Control and Injured Goats."

Dr. Chalmers L. Gemmill, Professor of Pharmacology: "Effect of Theobromine Derivatives and Alloxan on Muscle Metabolism." Dr. Gemmill also read a paper on "The Physiological Effects of Exercise on Man at Altitude" at the American Medical Association Meeting in Atlantic City on June 5th.

Regular meeting of the CATAWBA VALLEY MEDICAL SOCIETY, June 19th, at 6:30 p. m. at Lake Sylvia near Lincolnton, N. C.

## Program

"Report on the Mass X-ray Survey," by Dr. Robert F. Bell.

"Perinephritic Abscess With Unusual Complications," by Dr. Boyce Griggs.

"Hydatiform Mole," by Dr. J. F. Reinhardt.

"Tularemia Complicated by Diabetic Coma," by Dr. L. A. Crowell, Jr.

"Recurrent Intussusception," by Dr. A. M. Cornwell.

Case reports from the floor.

The Lincolnton doctors gave an interesting dinner program and hospitably entertained the Society and a number of invited guests.

## DR. WYCHE TO PRACTICE WITH DR. SADLER

Dr. R. C. Sadler, Whiteville, N. C., announces that Dr. J. T. Wyche is associated with him in the practice of medicine.

Dr. Wyche, a native of nearby Hallsboro, was recently released by the U. S. Navy after six years' service as a Flight Surgeon. He held the rank of Lieutenant Commander at the time of his release.

Dr. Wyche was educated at Wake Forest college and the University of Pennsylvania Medical School of the class of 1941. Every man in that class volunteered immediately for the service with the Armed Forces.

The patrol bombing squadron to which Dr. Wyche was assigned in July, 1943, participated in most of the cam-

paigns in the Southwest Pacific. It operated from Australia, New Guinea, the Netherlands East Indies, and the Philippines.

In addition to the Presidential Unit Citation, Dr. Wyche holds an Army Air Medal for participating in hazardous rescue missions involving Army personnel.

## MCV'S FIRST RHODES SCHOLAR

Robert Quarles Marston, M.D., 1947, will not practice as a doctor for another "four or five years," because Dr. Marston embarks October 3d on the Queen Elizabeth for two years—perhaps three years—as the Medical College of Virginia's first Rhodes scholar. He selected Lincoln College, on the advice of an old MCV Oxonian, Dr. Abbe Hoff, associate professor of neurophysiology. His immediate aim at Oxford is a thorough grounding in basic medical sciences. In this field he knows his course of study will include biochemistry, pathology and physiology, plus some others.

Student Marston became a recipient of the highly prized Rhodes Scholarship, one of the 48 given to United States students this year, by being a superior medical student. Drs. Hoff, Apperly and Porter of the MCV staff interested him in entering the Rhodes competition last fall.

A native of Toano, Robert Marston graduated from Virginia Military Institute as a premedical student in 1943, then entered MCV in January, 1944.

Scholarships from the Cecil Rhodes grants are valued at 500 pounds annually—something over \$2,000 at the going rate of exchange. The course of study leads either to a B.A. or B.S.

## MEDICAL COLLEGE OF VIRGINIA ALUMNI

Dr. Harry Lee Claud, of Washington, has been installed as president of the Medical College of Virginia Alumni Association, the ceremonies being held in the college's Egyptian Building.

Dr. Claud is attending surgeon of the Garfield Memorial Hospital and the Doctors' Hospital in Washington and a member of the board of directors of the Washington Medical Center. He is a graduate of the class of 1921.

The board of trustees of the association presented a traveling bag to the retiring president, Dr. Waverley R. Payne. The presentation was made by Dr. F. Dewey Davis.

All graduates in nursing at the school were presented with thermometers by the nursing section of the Alumnae Association, of which Mrs. Sabra Sadler is president. Mrs. Anne F. Mahoney outlined the functions of the nursing section.

Some 500 alumni, including men from Rio de Janeiro, Porto Rico, California, Texas and Wisconsin, attended the reunion.

## RICHMOND DOCTOR TO OPERATE KOREAN HOSPITAL

The first hospital to be operated by a church mission in Korea since the end of the war will shortly be opened by Dr. Paul S. Crane, of Richmond, under auspices of the Southern Presbyterian Foreign Mission Committee.

Dr. Crane received his medical degree from Johns Hopkins University in 1944. He is the son of a Presbyterian missionary. Dr. J. C. Crane, now stationed at Soucheon, which will be the site of the new hospital.

## POTEAU PRIZE FOR OTTO STUHLMAN

The Poteau prize, awarded annually by the North Carolina Academy of Science for a meritorious paper, was won this year by Otto Stuhlman, professor of physics in the University. His paper, read at the recent meeting of the Academy at Wake Forest, was entitled "A Dynamical Analysis of the Movements of the Lobes of the Venus Fly-trap."

## EMORY

The following new members have been appointed to the faculty of Emory University School of Medicine:

Dr. Marion Hines, as professor of experimental anatomy; Dr. Josef Szepeswol, as assistant professor of anatomy; Dr. Guy Darrell Ayer, Jr., as assistant professor of pathology;

Dr. Lee N. Foster, as associate in pathology; Dr. John L. Patterson, Jr., as instructor in physiology; Mrs. Hortense Elton Carver, as instructor in medicine (clinical pathology); Dr. Joseph H. Patterson and Dr. John T. Leslie, as assistants in pediatrics, and Dr. Charles E. Holloway, as assistant in surgery.

Four changes in the status of medical faculty members were also announced:

Dr. Robert Grant and Dr. David F. James, who were named to positions in the department of medicine earlier in the year, have been appointed instructors in the department of physiology;

Dr. Irving L. Greenberg, whose temporary appointment as assistant in anatomy expired June 15th, becomes assistant in surgery; and Dr. J. R. McCain reverts from full-time to part-time instructor in obstetrics and gynecology.

Also announced is the promotion of three members of the medical faculty:

Dr. Marion C. Pruitt from associate in surgery to assistant professor of clinical surgery (proctology); Drs. Buford L. O'Neal and James T. King, former assistants in clinical otology and rhinolaryngology, become instructors in that subject.

Resignations announced: Miss Christine Sappington, clinical instructor in maternal and infant care in the School of Nursing; Dr. Louis M. Rosati, associate in surgery; Dr. R. L. Dement, professor of oral medicine, and Dr. Harry B. Johnstone, associate professor of oral medicine.

## UNIVERSITY OF NORTH CAROLINA ALUMNI ASSOCIATION

Dr. Arthur H. London, of Durham, was elected president of the University of North Carolina's Medical Alumni Association at a luncheon session of the group held recently at Virginia Beach in conjunction with the annual meeting of the North Carolina Medical Society.

Dr. M. D. Bonner, of Jamestown, was named vice-president and Dr. Milton Clark, of Goldsboro, secretary.

Speaking at the luncheon were Dr. David Young, superintendent of the Medical Hospitals for North Carolina, and Dean W. Reece Berryhill, of the University of North Carolina Medical School.

THE NALLE CLINIC, Charlotte, announces the addition of two physicians to its staff, Dr. William F. Harrell, Jr., and Dr. Edward F. Hardman.

Dr. Harrell received his medical degree from the University of Virginia and is a native of Portsmouth, Va. He will be attached to the department of pediatrics.

Dr. Hardman received his medical degree from Temple University, Philadelphia, and is a native of Youngstown, Ohio. He will be in the department of obstetrics and gynecology.

## DOCTOR CLOWES HONORED

G. H. A. Clowes, Ph.D., Sc.D., LL.D., Director Emeritus of the Lilly Research Laboratories, was honored by the American Diabetes Association at its recent annual meeting at Atlantic City. He delivered the annual Banting Memorial address and was awarded the Banting Medal which is given in recognition of distinguished service in the field of diabetes.

Under Dr. Clowes' direction, the Lilly Research Laboratories cooperated with the University of Toronto and Drs. Banting and Best in the early development of insulin of sufficient purity and stability to permit its widespread clinical use throughout the world.

DR. JAMES P. BAKER, JR., director of continuation education at the Medical College of Virginia, has resigned to become medical director of the Greenbrier Clinic, White Sulphur Springs, W. Va. DR. CHARLES M. CARAVATI, a member of the department of continuation education, will direct certain aspects of the program on a part-time basis.

Dr. Baker has headed the continuation education department since the Spring of 1945. The department embraces graduate education, which covers work of internes and residents in the hospital, and post-graduate education provided for physicians who want refresher courses or further study. He is also associate professor of medicine at MCV, acting chairman of the dean's committee for McGuire Veterans Administration Hospital and a member of the three-man interim dean's committee at the Medical College School of Medicine. During the war he served as lieutenant-colonel with the Forty-fifth General Hospital in North Africa and Italy, first as assistant chief of medicine and later as executive officer.

Dr. Caravati received his medical degree from the Medical College in 1922 and has been in practice in Richmond since 1924. Since 1932 he has specialized in internal medicine. He served in World War I as a private and in World War II as chief of the medical service at Woodrow Wilson General Hospital, Staunton.

BRIGADIER GENERAL GUY B. DENIT, U.S.A., Deputy for Plans, Office of the Surgeon General, received the honorary degree of Doctor of Science from the Medical College of Virginia on June 17th.

DR. HOWARD P. STEIGER announces the opening of offices at 1519 Elizabeth Avenue, Charlotte, North Carolina. Practice limited to Dermatology.

DR. WILBUR M. BOWMAN, Petersburg, Va., physician who served as a major in the Army Medical Corps in World War II, to the position of Petersburg health officer has been announced.

Dr. Bowman succeeds Dr. Mason Romaine, who recently resigned the post to take up his duties as director of the division of cancer control in the State Health Department.

DR. J. MORRISON HUTCHESON, of Richmond, was made the recipient of the honorary degree of Doctor of Laws by Hampden-Sydney College at its commencement on June 3d.

DR. B. B. MCGUIRE, head of the district comprised of Mitchell, Avery and Yancey Counties, has resigned as health officer. Dr. McGuire has been with the health department since its inception four years ago. Under his leadership the department has been developed and organized on a well established footing.

Dr. McGuire has accepted a position dealing with public health in another Southern State.

DR. C. W. ARMSTRONG, of Salisbury, N. C., health officer of Rowan County, has been elected President of Kiwanis International.

## MARRIED

Dr. Walter Francis Becker, of Kaufman, Texas, and Miss Laura Pratt, of Chatham Hill, Virginia, were married on June 21st.

Dr. Donald James Farr, of Pasadena, California, and Miss Shirley Price Hilliard, of Richmond, Virginia, were married on June 21st.

Dr. Noland MacKenzie Canter, of Harrisonburg, and Miss Eleanor Camper Folk, of Salem, Virginia, were married on June 21st.



Dr. Marion Lee Rice, Jr., and Miss Virginia Lee Figg, both of Richmond, were married on June 29th.

Dr. Lane Ameen, of Hopewell, Virginia, and Miss Gertrude Hathaway, of Germantown, Pennsylvania, were married on June 21st.

### DIED

Dr. Carroll Harris Fowlkes, 59, Richmond ear, nose and throat specialist, died July 6th at the home of his brother-in-law, E. W. Beattie, at Columbia, Virginia, where he was spending the Fourth of July week-end.

Dr. Fowlkes was graduated from the Medical College of Virginia in 1910. He took internship work at Johnstown-Willis Hospital, Richmond, and at the Brooklyn Ear and Eye Infirmary, and established practice in Richmond in 1915.

During World War I, he served in the Medical Corps of the Navy as a full lieutenant and was attached to the Naval Hospital at Cape May, N. J. Dr. Fowlkes resumed his practice after the war and then began his specialization in ear, nose and throat work.

In the early 40's he was head of a group of citizens interested in sweeping changes in the public school system. The organization of which he was president—the League for More Efficient Public Instruction—charged that public school teachers as a group were inefficient.

Dr. D. Lesesne Smith, Spartanburg, S. C., pediatrician, and superintendent of the Baby Hospital at Saluda, N. C., died in an Asheville hospital July 7th.

The hospital at Saluda was the scene of several national pediatric conferences while Dr. Smith was in charge.

Dr. Frank T. Harper, Jr., of Burlington, N. C., was killed near his home in the crash of an airplane on July 4th. He was a native of Lenoir County, North Carolina, and a graduate in medicine of the Medical College of Virginia in the class of 1934.

Dr. Harper's companion in the fatal crash was Stephen A. Douglas, a native of Greensboro, a great grandson of Stephen A. Douglas, of Illinois, known as the "Little Giant," Abraham Lincoln's political antagonist.

Dr. Hugh Page Newbill, 38-year-old superintendent of DeJarnette Sanitarium, at Staunton, Va., was found dead in bed at his Albemarle County vacation cabin July 2nd by his secretary, Miss Margaret Hanger, when she went to the spot to have him sign some official papers. Investigating authorities said he had been dead more than two weeks.

Dr. Newbill, a native of Norfolk, left his post as assistant professor of psychiatry at University of Virginia School of Medicine last January to succeed Dr. J. S. DeJarnette as superintendent of the Sanitarium.

Dr. James R. DesPortes, of Fort Mill, S. C., died at his home June 1st. Dr. DesPortes was a native of South Carolina, and a graduate of her medical college in the year 1900. He was a practitioner of great ability and distinction and a leader in good works. He had served as president of the South Carolina Medical Association, and at the time of his death was a trustee of the Medical College of the State of South Carolina.

Dr. J. M. Graybeal, 70, eye, ear, nose and throat specialist of Marion, died at his home July 6th, at Marion, Va. Born in North Carolina, he was a graduate of the Medical College of Nashville, class of 1901. He formerly lived in Montana, where he practiced his profession for 38 years. He returned to Marion seven years ago to practice with his brother, Dr. Avery B. Graybeal.

Dr. William Thomas Potter, 59, died July 18th. He had been a patient at Norfolk General Hospital for the last five years and bedridden since fracturing his neck in 1926, when he slipped and fell at his home at Ocean View, Va.

Dr. Potter, a native of Beaufort County, N. C., was graduated from the Medical College of Virginia in 1910.

A promising medical career, which was begun at Aurora, N. C., in 1910 and continued in Norfolk in 1920, was cut short by the fall. He had offices at Ocean View, and had become well known in the six years he had practiced medicine and surgery in Norfolk.

Dr. John Young Templeton, 59, died at his home at Mooresville, N. C., July 15th.

Dr. Templeton was a native of Mooresville, a graduate of Davidson, and Jefferson Medical College, and first practiced in Deep Creek, Norfolk County, Virginia, for 12 years.

He returned to Mooresville in 1926 after doing graduate work in pediatrics at Tulane and since then had carried on a large practice.

### Medical Publications Needed Overseas

As a result of war and persecution, doctors, dentists and technicians in allied fields throughout Europe have been deprived for more than ten years of news of the latest developments in their professions—the kind of news and analysis contained in this journal.

When you have finished this issue, put it to work by sending it to the SOS (Supplies for Overseas Survivors) Collection of the Joint Distribution Committee, 1 West 39th Street, New York 18, N. Y. It will be placed in a library in a D. P. camp, child care center, hospital or school, for use by professionals desperately anxious to bring themselves up-to-date on the knowledge forcibly kept from them by the Nazis.

### Eli Lilly Award to Professor Umbreit

Professor Wayne W. Umbreit, College of Agriculture, Cornell University, receives the tenth annual Eli Lilly and Company Award in Bacteriology and Immunology at the Society of American Bacteriologists meeting in Philadelphia. The award consisted of a one thousand dollar check and a plaque.

### Vitamin Advertising and The Mead Johnson Policy

The present spectacle of vitamin advertising running riot in newspapers and magazines and via radio emphasizes the importance of the physician as a controlling agent in the use of vitamin products.

Mead Johnson & Company feel that vitamin therapy, like infant feeding, should be in the hands of the medical profession, and consequently refrain from exploiting vitamins to the public.

### A SCHOLAR AS WELL AS A GENTLEMAN

Knowing that the minister was very fond of brandied cherries, one of the church elders offered to present him with a bottle on one consideration—that the pastor acknowledge receipt of the gift in the church paper.

"Gladly," responded the good man.

When the church magazine came out a few days later, the elder turned at once to the "appreciation" column. There he read: "The minister extends his thanks to Elder Grier for his gift of fruit and for the spirit in which it was given."—*U. S. Coast Guard Magazine*.

OF CASES OF CHRONIC ALCOHOLISM (in 1944, the latest year of full report) California had the highest rate—1,161 chronic alcoholics per 100,000 adult population; the lowest rate, 321 per 100,000, was that for South Carolina.—E. M. Jellinek, in *Quar. Jl. on Alcohol*, June.

## BOOKS

A HISTORY OF THE AMERICAN MEDICAL ASSOCIATION, 1847-1947, by MORRIS FISHBEIN, M.D., with the Biographies of the Presidents of the Association by WALTER L. BIERRING, M.D., and with Histories of the Publications, Councils, Bureaus and Other official Bodies. 1226 pages. *W. B. Saunders Company*, Philadelphia and London, 1947. \$10.

As we know, this book is published as a part of the celebration of the 100th anniversary of the American Medical Association at the time of the Centennial Session in Atlantic City in June. The book gives the background and many details of the formation of the Association and its development from small beginnings to the greatest organization of medical men that has ever existed. The great achievements of this body in its campaigns to improve medical education, to expose and destroy quackery, to suppress fraudulent "cures," and to provide in every way for healthier and longer living, are all described in a way to interest all medical men and all others of the intelligent in the population.

PARENTERAL ALIMENTATION IN SURGERY, With Special Reference to Proteins and Amino Acids, by ROBERT ELMAN, M.D., Associate Professor of Clinical Surgery, Washington University School of Medicine, St. Louis. *Paul B. Hoeber, Inc.*, 49 East 33rd St., New York 16, 1947. \$4.50.

Feeding by vein is of recent development. The giving of foods other than glucose by vein is of very recent development. Parenteral alimentation as a whole is responsible for a considerable lowering of the mortality rate in medical and surgical cases.

This monograph covers this important subject in so excellent a manner as to have been awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, which is to say that there could be no better presentation of the present status of the subject.

CURRENTS IN BIOCHEMICAL RESEARCH, edited by DAVID E. GREEN, Interscience Publishers, Inc., 215 Fourth Avenue, New York 3, N. Y., 1946. \$6.

The authors' aim has been to stimulate the imagination and provide glimpses of some of the fascinating horizons of biochemical research. The book represents an attempt by about 30 research workers to describe in non-technical language the important developments in their own field and to speculate a bit on likely paths of future progress.

A doctor of medicine will find the chapters on the gene and biochemistry, viruses, the bacterial cell, hormones, chemotherapy, physiology and biochemistry, and immunochemistry of special interest.

DERMATOLOGIC CLUES TO INTERNAL DISEASE, by HOWARD T. BEHRMAN, M.D., Assistant Clinical Professor of Dermatology, New York University College of Medicine; Adjunct Dermatologist, Mount Sinai Hospital and Beth Israel Hospital. *Grune & Stratton, Inc.*, 443 Fourth Ave., New York City, 1947. \$5.

The skin is considered as a specially functioning and protective coat having nervous, vascular and hormonal relations with the viscera and the central nervous system. It has been observed from the earliest medical times that general disease or disease of the internal organs may have cutaneous manifestations. This subject is presented here in the form of concise descriptions of general disease conditions having skin manifestations. The text, with the aid of a number of striking illustrations, will certainly serve in some instances to put the physician on the trail of the correct diagnosis.

*Convulsive Disorders—From P. 236*  
hypertrophy of the gums. Mebaral is as good as phenobarbital and it causes less drowsiness. The dosage is 0.1 Gm. (1½ grains) two to four times a day. Should large amounts of the barbiturates be required, the resulting drowsiness can be offset by small doses of amphetamine sulfate. Under no circumstances should a barbiturate be discontinued abruptly, because this may precipitate a series of attacks.

The bromides, 1.2 Gm. (20 grains) to 1.8 Gm. (30 grains) per day, are occasionally beneficial when other less toxic drugs have failed. The blood bromide level ought to be kept at about 40 mg. per 100 c.c.

Petit mal seizures usually respond well to either mebaral or phenobarbital. Dilantin is useless. A new drug, tridione, is efficient in controlling some cases of minor fits 0.3 Gm. (5 grains) t.i.d. It has been reported to have caused fatal aplastic anemia and agranulocytosis: patients taking this drug regularly should have periodic blood counts. A common side effect in adults is photophobia; often necessary to wear dark glasses when in bright light.

*It is common for patients to be subject to both grand and petit mal attacks.* In mild cases the barbiturates alone will often give adequate control of both. In the more severe cases it is necessary to use dilantin and one of the barbiturates, or dilantin plus tridione.

Psychomotor attacks seemingly are helped by all three drugs—dilantin, the barbiturates and tridione—but often do not respond well to any. Each of these three ought to be tried alone, and in the various possible combinations.

If it is found that fatigue, loss of sleep, constipation, alcohol, hunger, anxiety, or nervous tension precipitate attacks, the indication is obvious. Should such situations be unavoidable, an extra amount. Increase the dosage of the medication when the seizures are anticipated.

CARE OF THE BREAST, by ELSE K. RAROE, M.D. *Froben Press*, 4 St. Luke's Place, New York 14, N. Y., 1947. \$3.75.

The author has in view especially pathological conditions which tend to lead to cancer and other chronic diseases of the mammary gland. The frequency of occurrence of breast cancer makes it needful that we know all that is to be known on the subject and to keep this knowledge in the front of our minds. It is said that a pendulous breast "may be a potential factor in the formation of a malignant tumor."

Reconstructive surgery of the female breast is considered from the economic and psychologic, as well as from medical and surgical, viewpoints.

DOCTOR, DON'T LET ME DIE!, by S. S. KEINER. Collaborator: DAN GORDEN. *Meador Publishing Co.*, Boston 15, 1947. \$3.50.

"But crook or king, prince or pauper, when I am called, I recognize no boundary lines, no social strata (sic) of race, color, creed or wealth in my sacred duty and grave responsibility toward the preservation of the life and health of all mankind." Thus begins the second paragraph of the book. The author need not have set up any such exclusive claim for himself. No other doctor recognizes any such boundary lines. All of us practice on this principle, with no protestation of any great and exclusive virtue.

It is not surprising to find the dedication is: "To the birth of Socialized Medicine with its sacred mission to destroy American pain."

It is surprising to find an adulatory introduction by a professor in one of our medical schools of high rank.

GASTRITIS, by RUDOLF SCHINDLER, M.D., F.A.C.P., Clinical Professor of Internal Medicine (Gastroenterology), College of Medical Evangelists, Los Angeles. *Grune & Stratton*, 443 Fourth Ave., New York City, 1947. \$8.75.

There is perhaps no medical subject on which there is more difference of opinion than on that of gastritis. A good deal hinges on the definition, and further on whether anatomical gastritis is pathological gastritis. Certainly, if gastritis be anything like a common disease entity, it must be a very mild and puny thing, which can well be disregarded, until evidence is adduced that patients whose stomachs present the variations from the average which gastroscopists diagnose gastritis are specially prone later to develop gastric ulcer or carcinoma.

THE 1946 YEARBOOK OF DERMATOLOGY AND SYPHILOLOGY, edited by MARION B. SULZBERGER, M.D., Commander, M.C., USNR; Assistant Clinical Professor of Dermatology and Syphilology, New York Post-Graduate Medical School of Columbia University; Assistant Editor, RUDOLF L. BAER, M.D., Assistant Attending Physician, Skin and Cancer Unit, New York Post-Graduate Hospital, Columbia University. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago. \$3.75.

Among the important questions asked and answers cited are those concerning the comparative values of tyrothricin, sulfonamides and penicillin by topical application; choice of treatment for chancroid; the superiority of penicillin treatment of syphilis in pregnancy; the 13 skin diseases benefited by vitamin A; treatment of tinea capitis with iodine and acetic acid.

An excellent coverage of the subject in yearbook fashion.

GYNECOLOGY with a section on FEMALE UROLOGY, by LAWRENCE R. WHARTON, Ph.D., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Assistant Attending Gynecologist, The Johns Hopkins Hospital; Consultant in Gynecology, The Union Memorial Hospital, Hospital for the Women of Maryland, Sinai Hospital and Church Home and Infirmary. Second Edition. 1027 pages, with 479 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1947. \$10.

It is a very reasonable and convenient arrangement to include female urology in a textbook of gynecology, and almost certainly this arrangement is accountable for a considerable part of the great popularity of this book, which now comes to its second edition. In this second edition are incorporated the advances in this field of medicine since the publication of the first edition, which has meant rewriting entire sections. The author has presented both sides of certain important questions on which there is wide diversity of opinion. Recent developments in operative technique have been presented along with improved illustrations. The whole makes an excellent coverage of the subject in fewer pages than most textbooks on this subject.

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(R. D. McClure & L. S. Fallis, Detroit, in *Ohio Med. J.*, June)

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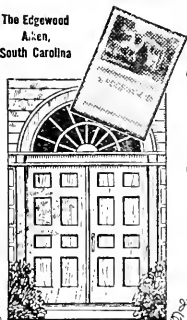
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JAMES M. NORTHINGTON, M.D., Editor

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## The Differential Diagnosis of Bronchial Asthma

Report of Two Cases of Bullous Emphysema

MASON I. LOWANCE, M.D., EUGENIA C. JONES, M.D., WARREN B. MATTHEWS,  
M.D., and EDGAR M. DUNSTAN M.D.

Atlanta

Read in the Second Annual Session, Southeastern Allergy Association, Atlanta, Jan. 18th and 19th

**T**HE DIFFERENTIAL DIAGNOSIS of bronchial asthma presents problems which, in many instances, are extremely difficult of solution. Many such cases may be diagnosed readily, even at sight, but symptoms which simulate bronchial asthma; but which arise from other causes are seen frequently enough to necessitate careful study in each asthmatic individual.

In the discussion of several such cases, we are also presenting two cases of bullous emphysema—one bilateral, the other unilateral.

Most of the patients were seen with an initial complaint of bronchial asthma, and one also had pulmonary tuberculosis. The cases which are presented were selected to illustrate the need for clarifying the diagnosis in patients with asthma.

Many instructive reports are presented in the recent literature, some of which will be presented here in outline form by lantern slides.

Soderman (1945) opens his discussion of the differential diagnosis of bronchial asthma by describing a typical asthmatic attack. He points out that this attack may be terminated at any time and that if arrested early, when symptoms are limited to some difficulty in deep breathing, oppression, chest constriction and tightness, asthma may not be diagnosed as such. Similarly, if arrested after the appearance of sonorous and sibilant rales, but before the attack progresses to its peak, the episode may be confused with other conditions, particularly the bronchial syndromes.

Soderman states that bronchial asthma is characterized by recurrent attacks of dyspnea, which is more marked in expiration, and accompanied by wheezing and cough. Bronchial asthma is a specific and unusual type of inflammation, generally not infectious in origin and readily reversible.

The author points out that the presence of other disease may overshadow the asthmatic picture, or vice versa. The great and important differences in treatment and prognosis of many of these conditions demand that they be ruled out. These conditions are listed as taken from Maytum (1930):

### A. Respiratory System:

#### I. Larynx:

##### (1) Spasm:

- (a) Spasmodic croup
- (b) Laryngismus stridulus
- (c) Laryngeal crisis of tabes dorsalis

##### (2) Inflammation:

- (a) Acute (acute laryngitis, diphtheritic laryngitis)
- (b) Chronic (tuberculosis, syphilis)

##### (3) Angioneurotic edema

##### (4) Paralysis of vocal cord

##### (5) Laryngeal stenosis

##### (6) Foreign body

##### (7) Neoplasm

### II. Trachea and Bronchi

#### (1) Intrinsic lesions:

- (a) Acute and chronic bronchitis

- (b) Chronic inflammation with stenosis (bronchiectasis, tuberculosis, syphilis, foreign body)
- (c) Neoplasm (benign; malignant)
- (2) Extrinsic lesions:
  - (a) Substernal enlargement or carcinoma of the thyroid gland
  - (2) Enlargement of the thymus gland
  - (c) Aneurysm of thoracic aorta
  - (d) Tuberculosis of tracheobronchial nodes
  - (e) Mediastinal neoplasm (benign; malignant)
- III. Lung
  - (1) Inflammation
    - (a) Pneumonia
    - (b) Tuberculosis
    - (c) Pneumoconiosis and pulmonary fibrosis
  - (2) Idiopathic pulmonary emphysema
  - (3) Neoplasm of lung and pleura
  - (4) External pressure
    - (a) Pneumothorax
    - (b) Hydrothorax
- B. Circulatory system
  - I. Cardiac decompensation
  - II. Coronary sclerosis
  - III. Paroxysmal auricular Flutter or Fibrillation; Paroxysmal Tachycardia.
- C. Renal system (manifested in circulatory system)
- D. Nervous system
  - I. Functional air hunger.
  - II. Hysterical polyepnea
  - III. Respiratory syndrome following encephalitis.

Criep (1943) discusses bronchial asthma, cardiac asthma, and chronic cor pulmonale. This author states that in bronchial asthma, the difficulty in breathing is due to edema of the bronchial mucous membrane, in cardiac asthma usually to failure of the left ventricle in a patient over 50. As a rule, bronchial asthma does begin after the age of 50 or 55. There are no electrocardiographic findings indicating myocardial changes in bronchial asthma, no associated cardiac pain. Treatment of cardiac asthma consists of reducing the irritability of the vital centers with morphine. As a rule, morphine is contraindicated in bronchial asthma. Adrenalin, which effectively relieves bronchial asthma, is of doubtful value in cardiac asthma and in many cases is contraindicated.

A case is presented of a man, aged 53, with paroxysmal nocturnal dyspnea of four-years' duration. Marked pulmonary fibrosis was present. Progressive thickening of the blood vessels of the

lungs in such cases produces increased pressure in the pulmonary artery, pulmonary hypertension and increased load on the right heart. Such cases show definite clinical manifestations including dyspnea with or without wheezing, cyanosis, hemoptysis, polycythemia and clubbing of the fingers. In advanced cases, this condition is referred to as Ayerza's disease (clinical cor pulmonale).

Treatment is directed toward alleviation of the primary condition.

Waldbott (1945) stresses the fact that wheezing confined to one pulmonary area suggests a non-allergic process. Rales plus asthmatic bruits suggest disease other than allergic asthma and its complications, usually pneumonitis or bronchiectasis. "Asthmatic" patients lying down should be suspected of having some other disease. If no history of nasal symptoms before or with an asthmatic condition can be obtained, caution should be exercised in making a diagnosis of allergic asthma.

The following points were observed in cases presenting a combination of asthma and tuberculosis

(1) Asthmatic wheezing is encountered in the course of tuberculosis and easily confused with asthma. Enlarged tuberculous glands, stricture of bronchi, or mucous and caseous material lodged in the bronchial tubes may induce bronchial spasm and wheezing in patients who are not allergic.

(2) Allergic asthma may be complicated by tuberculosis.

(3) Tuberculosis may be followed by allergic asthma.

(4) Asthmatic patients with healed tuberculosis have shown strong skin reactions to tuberculin, while skin tests for allergy were not conclusive.

This author believes that metabolic studies are done more frequently in asthmatic individuals than in the general run of patients, and to this practice he attributes the frequency of the reports of thyroid disturbances in such patients. He also lists sinusitis, pneumonitis and bronchiectasis as the three commonest complications of allergic asthma.

Moore (1945) presents a table contrasting the findings in bronchiogenic carcinoma with those in bronchial asthma. This author points out that carcinoma of the lung is responsible for only a small percentage of mechanical wheezing. He mentions that in Overholt and Rumel's series of 75 cases of bronchoiogenic carcinoma only 38 per cent gave symptoms of dyspnea and wheeze. Moore reports four such cases which followed the pattern of bronchial asthma. His differentiation is as follows:

*Carcinoma*

1. No history of allergy; symptoms develop after age 45
2. Cough precedes wheeze by several months
3. Wheezing, rales, localized
4. Diaphragm arched
5. No eosinophils in sputum
6. Blood in sputum
7. Loss of weight and rapid downhill course

*Asthma*

1. History of allergy; symptoms developed before 45
2. Cough comes with or follows wheeze
3. Wheezing, rales, generalized
4. Diaphragm flattened
5. Eosinophils present
6. Blood seldom in sputum
7. Weight and course remain about the same

Tuft (1938) groups conditions resembling asthma as: (1) cardiac, (2) pulmonary, (3) mediastinal.

*Cardiac:* The most important member of this group is cardiac asthma, a paroxysmal type of dyspnea accompanied by wheezing respiration occurring not infrequently at night and usually in persons past middle life. This condition so closely simulates bronchial asthma in physical signs that differential diagnosis cannot be made from physical examination of the chest alone. It occurs in patients with organic diseases of the cardiovascular system, usually hypertensive, and is believed to be due to a sudden partial failure of the left ventricle, occurring in a patient whose right ventricle is functioning normally, and producing, in turn, acute pulmonary hypertension, intense emphysema and pulmonary edema. Often there is a history of precordial pain or oppression of the anginal or coronary type.

Proper examination of the cardiovascular apparatus usually elicits the evidence for differentiation of cardiac asthma from bronchial asthma. The patient with cardiac asthma will usually show hypertension, various degrees of enlargement of the heart, cardiac murmurs and evidence in the electrocardiogram of impairment of conductivity—all indicative of a type of cardiac disease totally different from the findings in bronchial asthma. Additional aid may be obtained by failure of the attack to respond as well to adrenalin as to morphine and also by the absence of positive skin reactions. Occasionally, difficulty may be experienced in cases of nocturnal attacks of asthma with only mild or moderate hypertension and without signs of advanced cardiac disease. It may be difficult or even impossible to determine whether one is dealing with bronchial asthma in a patient who happens to be hypertensive, or the asthma is the result of the cardiac lesion. This is doubly difficult if skin tests prove positive. It is probably better in these rare instances to treat the patient for both conditions.

The term cardiac asthma is something applied to designate the attacks of dyspnea occurring in relation to cardiac decompensation or failure. Its use in this connection is incorrect since in true cardiac asthma, as described above, the attacks of

dyspnea are paroxysmal or periodic in nature and accompanied by wheezing respiration, whereas in cardiac decompensation, the dyspnea is more or less constant and not accompanied by any wheezing or prolongation of expiratory sound.

*Pulmonary conditions simulating asthma:* Chronic bronchitis, particularly the type which occurs in older individuals, is very often associated with a chronic emphysema accompanied by sibilant and sonorous rales or at times by a wheezing type of respiration but without the dyspnea or other signs characteristic of the acute asthma attack. This type has been called asthmatic bronchitis or asthmatoïd bronchitis. Some difference of opinion exists as to whether this type of asthmatic bronchitis is essentially a form of asthma due to bacterial sensitivity; or whether, as Tuft believes, it is secondary to infection of the bronchial tubes which has resulted in production of sufficient bronchial obstruction to produce a mild wheeze.

*Pneumoconiosis* (especially the form seen in coal miners): Patients in this group, after long-continued exposure to coal dust, begin to show evidence of chronic bronchial irritation in the form of frequent attacks of bronchitis. The history of exposure to some type of occupational dust, as well as the presence of bronchitis for a long time before the onset of wheezing, together with physical and x-ray findings, usually differentiate the wheezing of pneumoconiosis from true allergic asthma.

In chronic bronchitis due to other causes, its occurrence in persons past middle life, usually with moderate or marked emphysema, protracted cough with little or no dyspnea, despite the presence of the signs of wheezing in the chest, mucopurulent sputum and the absence of any evidence of allergy either in the history or by special examination, are all of diagnostic importance and distinguish this type from others.

Certain patients have periodic or recurrent attacks of cough without any dyspnea or wheeze in the chest. Difficulty may be experienced in determining whether the cough is allergic or of other origin. This is especially true in children. Skin tests are particularly valuable in these cases.

*Thymic asthma.*—This is seen frequently in infants, showing cyanosis, stridor and an inspiratory type of dyspnea. In some instances, the dyspnea may be paroxysmal and of a wheezing or asthmatic type. Enlarged thymus is found upon x-ray examination.

Mediastinal tumors, lymphadenopathy or aneurysms of the aorta or its branches rarely cause diagnostic difficulties. The dyspnea is usually inspiratory and accompanied by stridor. Physical signs and x-ray findings confirm the suspicions aroused by the history.

Finally, a condition difficult to classify in the other groups and occasionally offering diagnostic difficulty is hysteric dyspnea or tachypnea. This may occur paroxysmally but is rarely accompanied by wheezing respiration. Diagnosis here is made by the absence of the usual findings of bronchial asthma and by psychiatric examination.

Price and Teplick report eight cases of progressive bilateral bullous emphysema. They point out that this is a disease which is limited to men, characterized by cough, increasing dyspnea, respiratory infections and asthma-like attacks.

#### Case Presentations

*Case 1:* A woman, aged 47, first seen in 1942, complained chiefly of lack of energy, pain and congestion in the right chest. She stated that she had had hayfever all of her life, and five years previously had an acute attack of asthma. Since that time she had a little wheezing at intervals but no definite attacks. Skin tests in 1929 had shown reactions to ragweed, orris root and cat hair. Extracts had been given with some improvement.

A paternal aunt had asthma, a paternal uncle had hayfever, and the patient's eldest son had asthma. Her youngest son subsequently developed asthma.

The patient referred to an attack of acute indigestion two months previously, at which time she noted pain in the lower two-thirds of the sternum radiating to the posterior chest and right shoulder and down the right arm, then into the left arm, the attack lasting about 15 minutes, followed a hurried lunch at a time when patient was tired, nervous and upset. Soreness in the chest lasted for some time following this.

This patient was put on ragweed extract and continued to have moderate asthma from time to time. In August, 1943, she again complained of pain in the right side of chest following a cold. She stated that iodides seemed to help this. The lungs showed coarse rales throughout. In February, 1944, she had another acute episode with severe epigastric pain radiating around the left subcostal margin. This was accompanied by epigastric tenderness and marked tenderness over the gallbladder area. The patient was seen at home during this attack and dilaudid and atropine were required for relief. In March, 1944, she complained of a sense of discomfort around the right chest if she wore tight clothing.

In May, 1945, this patient continued to complain of stuffy feeling in right side of chest. These complaints referable to the right side of chest varied a little but have usually been in the right chest; occasionally with similar discomfort in the left.

In August, 1946, the patient complained of marked discomfort in right chest for the past three or four days, now continuous. It was worse on getting up in the morning, felt like a terrific indigestion, with a sense of great pressure, and necessitated belching for five or ten minutes for relief. If she stayed in one position it would stop hurting for a while. The last two mornings she had gotten up with a feeling of a lump in her lower chest.

The original examination in August, 1942, showed in the right chest a shadow continuous with the heart shadow which rounded out to the right so that it was continuous with the diaphragm at its center of density not quite the same as that of the heart shadow.

Gallbladder x-ray in 1944 showed chronic cholecystitis with question of stones. There was no decrease in concentration after the fatty meal, but at 24 hours there was some decrease. X-ray of chest in February, 1942, showed the same mass in the right chest. In July, 1944, this mass

did not appear quite so definite but looked more like fixation of the base of the lung and medial side of the lung to the cardiac shadow area and to the center of the diaphragm. X-ray in May, 1946, showed no essential change in this area of increased density of right chest unless it was a little more dense than previously. However, in view of patient's increased complaints, she was referred to one of the chest surgeons for consultation.

Bronchoscopic examination done in October, 1946, showed probably some obstruction in the right lateral basilar branch of the right lower bronchus. Diagnosis was probable adenoma of the right middle-lobe bronchus. Thoracotomy was advised.

The patient stood the procedure well and returned a few weeks subsequently for surgery. Operation revealed hernial sac of grapefruit size containing omentum incarcerated by adhesions in the interlobar fissure between the right middle and lower lobe. The hernia passed across to the mediastinum and came out of the peritoneal cavity through the foramen of Morgagni and was surrounded by an amount of mediastinal fat amounting to a mediastinal lipoma.

*Discussion:* This patient is a true asthmatic. Without repeated x-ray examination, the chest pain could have been interpreted as evidence of the pulmonary fibrosis commonly seen in such individuals, and the epigastric pain as a symptom of her chronic cholecystitis. As pointed out by the surgeon, even bronchoscopic examination failed to give the complete diagnosis in this patient. We feel sure that she will benefit by her recent surgery, even though she will continue to have some asthma.

*Case 2:* This patient was first seen at age 53 with complaint of asthma for many years. The attacks had become more frequent and more severe in later years. All known medications had been used, with some relief. This patient had lived in and visited many parts of the country, with no relief in any region. Since 1944, he had been almost completely disabled by recurring asthmatic attacks. He had had from time to time symptoms of cardiac decompensation. Marked pulmonary fibrosis was a complicating factor.

He had had eczema for some time, quite severely recently, probably secondary to long-continued use of large amounts of aminophyllin. Skin tests, done several times, were always negative.

Electrocardiograms showed myocardial disease at the time of original examination, increase in myocardial changes in May, 1946, and a recent coronary occlusion in August, 1946. Congestive failure to the point of producing ankle edema had been present in the past few months.

*Discussion:* This is a picture of intrinsic asthma with a superimposed cardiac asthma. The increasing severity of his asthma has been accompanied by increasing cardiac disability, with finally a coronary occlusion.

*Case 3:* A man, 58, was first seen in October, 1944, with a chief complaint of pain in the upper abdomen and lower chest, radiated under the shoulder, under the arm and down the left arm. He had had a previous attack in 1941 with some digestive disturbance and has had dyspnea for past three years.

A little asthma occasionally for past several years—attributed to cigarettes—just a little wheeze, not extremely disturbing, but the dyspnea had been quite disturbing. He also had had some eczema since infancy. He had no known food allergies but had one attack of urticaria. The patient has had diabetes mellitus for 18 years, controlled by a daily dose of 40 units of protamin zinc insulin.

At the time of the illness three years ago, the patient was operated on and unknown to him, malignancy of the lower bowel, inoperable, was found.

X-ray examination showed a normal gallbladder; with barium studies, stomach normal, irregular appearance of

the duodenal cap. Lungs showed hilar fibrosis. One month later the heart shadow (fluoroscopic) was appreciably enlarged, there was some increase in lung root changes, particularly on the left. There was a question of increased findings just lateral to the aortic arch. Less diaphragmatic excursion was noted than on previous examination.

This patient's course was rapidly downhill and quite stormy, with continuous abdominal pain, dyspnea, and increasing huskiness of the voice. There was very little aeration of the left lower lobe. Wheezing was slight with the patient erect, but, with the patient prone, was generalized over both lungs, greater on the right than on the left. Occasional fibrillation was noted soon after patient was first seen here, and it became constant a little later. A palpable, tender mass the size of a lemon appeared over the liver margin at the gallbladder area.

The patient was hospitalized, had increasing constant pain which was finally controlled only by opiates and died less than three months after he was first examined here.

**Discussion:** This patient was ignorant of his previous findings and indignant over his failure to improve satisfactorily. His original x-ray pictures show no more abnormality than we would expect in the usual asthmatic. His rapid downhill course represented the inevitable termination of his disease. It is interesting to note that his wheezing had begun years before any marked lung abnormalities could be demonstrated by the x-rays. Postmortem examination would not have given us the whole story on this individual, but the question arises, were metastases present and producing his wheezing much earlier than demonstrated?

**Case 4:** This man, aged 43, first seen in 1942, complained of weakness on slight exertion. Examination showed wheeze throughout lung fields, e.g. normal. Three minims of adrenalin gave some relief. He was next seen in 1946 with dyspnea which at that time he stated he had had for eight to ten years. For past six weeks shortness of breath had been worse, particularly at night. A productive cough has long bothered him, and since a recent acute cold wheezing and shortness of breath were worse. He noted edema on one occasion about six years ago. Damp weather affected him injuriously.

Skin tests were entirely negative. Blood pressure was 122/80, weight 160, 15 pounds overweight. Heart sounds distant due to wheezing throughout the lung fields, frequent extrasystoles. Ecg. showed evidence of myocardial damage, probably arteriosclerotic; x-ray examination of chest showed pleural bleb-formation, emphysematous, in both upper lung fields.

Sputum examination in September, 1946, revealed many acid-fast organisms. One subsequent sputum examination was negative; a third revealed a few acid-fast organisms. The blood sedimentation rate was 41 mm. per hour.

The use of iodides, pyribenzamine tablets and vaponefrin spray produced considerable improvement.

**Discussion:** This patient apparently is one of those with wheezing secondary to tuberculous changes in the lungs. The findings of completely negative skin tests bears out this impression. His early satisfactory response to adrenalin was misleading. His response to iodides, pyribenzamine and vaponefrin spray also suggested some allergic factor. The bullous emphysema was undoubtedly the primary cause of his wheezing, with changes secondary to tuberculosis a contributing factor.

**Case 5:** A man, aged 38, first seen in 1938, had no specific complaints, came in for a general examination in connection with employment. His weight was 125, ideal weight 155. His t. was 99.2 (but he had acute coryza), a few cavities in his teeth—no other physical abnormalities were noted. The patient was directed to return for tem-

perature re-reading. Seen one year later for another routine examination, he had no complaints and normal physical findings.

In April, 1939, patient was in complaining of nasal congestion with frequent swelling of the throat, particularly in the spring. He had omitted smoking and found no improvement. Marked congestion of the inferior turbinates with almost complete occlusion of the left nostril was noted. Skin tests were negative.

Seen next in July, 1946, he gave a history of having moved to Minnesota in 1940. That summer shortness of breath and cough began, mostly at night. The company doctor told the patient that he had a bad heart, but this was contradicted by the doctors at Mayo Clinic in 1941 and 1944. Here he was told that he had left bundle-branch block, congenital, and emphysema of the lungs as an end-result of asthma or bronchiectasis. The patient's chest was badly distended. At the Mayos the patient was given iodides and sedatives, a combination of helium and oxygen, also ephedrine. He was benefited by this treatment. Later he was given aminophyllin which relieved him to some extent.

At the present time, the patient is taking aminophyllin three times a day, as well as benadryl, the latter on his own prescription. Patient took 50 mgm. six times daily for two weeks and then 100 mgm. for two weeks. Patient also uses adrenalin spray.

In Minnesota he was free of symptoms during April and September. After his return to Atlanta, though his symptoms were milder, he was never entirely free from them.

Symptoms at last examination were shortness of breath on exertion, nocturnal dyspnea and chronic cough producing some white, mucoid sputum, excessive perspiration at night. No swelling of ankles had occurred recently. Muscle soreness in the left upper chest after three or four days of asthma and particularly after increasing coughing.

This patient had complete examination in 1943 in Minneapolis, including skin tests. He believed he was sensitive to oysters, oranges, ginger, coconut, pepper, asparagus, strawberries, liquor, grapes, mushrooms, limes, Irish potatoes and wheat, pork and veal. Once in a while he had terrific spells of sneezing, with some itching of the nose. He believed that the start of all his trouble was humidity in Minnesota and flour dust with which he had daily contact because of his work. He also noted that change in temperature increased his disability.

In July, 1946, his weight was 121 pounds, blood pressure 132/90. Papular dermatitis was present over the sternum and lumbar spine and a vesicular and macular dermatitis over the buttocks. The chest was barrel-shaped, expansion slight and forced, breath sounds altered in proportion to the poor expansion with mild wheezing over the entire chest with patient sitting.

After using aminophyllin and an adrenalin spray, and reclining, there was less wheezing. The restricted respiration was constant in all positions and regardless of the spray. Over the right lower lobe, there were slight alteration of fremitus and numerous crepitant rales. Other than this, few rales were heard over the chest. Wheezing was no greater over the right lower lobe than elsewhere.

Red and white cells and hemoglobin were normal (only 1% eos.) Sputum revealed no acid-fast organisms, on smear or on culture. X-ray examination of the chest showed marked emphysema, particularly of the left upper lobe, costophrenic adhesions, and displacement of the heart and trachea to the right. Gallbladder series was normal. Ecg. showed sinus arrhythmia with a rate of 120 and an occasional ventricular extrasystole. Bundle-branch block was also present.

On September 14th, patient had a sudden attack of chest pain during the night, "something broke loose" in his left chest. This was accompanied by very sharp pain. The pain lasted only a very short period of time, patient broke out in a cold sweat and felt as though his heart would stop. By the time he was able to call for a doctor he felt so much better that he decided to wait until morning when he felt much better than usual even though his endurance and physical ability were somewhat decreased, as was the cough.

Examination at this time showed decrease in the size, hyperresonance, no breath sounds and no rales or wheeze throughout the left chest. This is a picture of a collapsed left lung more than on previous examination. X-ray examinations show pneumothorax in the left upper lung region on September 19th, more marked than on any previous film.

Referred to a chest surgeon for consultation, x-ray findings show advanced state of "vanishing lung disease" in the left lung, so that at least 60 per cent of the left chest cavity is filled by huge emphysematous bullae, the remainder of the lung (in the hilar region) compressed. Impression was of bronchiectasis associated with marked spasm and obstruction in the peripheral elements of the lung. Bilateral pulmonary vagotomy to be done extrapleurally in two stages was advised.

**Discussion:** This patient presents the picture of bullous emphysema, progressive. The chest surgeon believes that surgery may be of value to him.

#### SUMMARY OF CASE PRESENTATION

In general, the cases presented illustrate the advantages to be derived from complete and repeated careful examination of the individual with asthma. Every resource known to modern medicine is called into play in such examination. The recent advances in chest surgery have made possible the surgical treatment which was advised for two of these patients. Without careful history and repeated x-ray examinations, the patient with carcinomatosis could have easily been interpreted as being asthmatic. The patient with tuberculosis and emphysema also presented a clinical picture of asthma. In the average case, such complete investigation may not be necessary at the time of original examination, but usually becomes so sooner or later, and it is a saving of time and energy to have it done when the patient is first seen.

—215 Doctors' Building

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#### THE ARTIFICIAL KIDNEY\*

(W. J. Koff, Municipal Hospital, Kampen, Netherlands, in *Jl. Mt. Sinai Hospital*, July-Aug.)

Of the several forms of premia—renal, extrarenal, and mixed—I will limit myself to the purely renal type.

A big drum or cylinder turns so that its undermost segment is constantly immersed in a bath of rinsing fluid. Forty-four to 55 yards of Visking cellulose tubing have been wound around this cylinder. The tubing contains only a small quantity of blood. When the drum rotates the blood constantly sinks to the lowest levels of the cellophane coils. In so doing the blood runs through the Visking cellulose spiral from left to right. The blood is under no additional mechanical pressure; there is just a thin film of blood in the cellulose tubing and it runs by gravity only.

It is our practice nowadays to do continuous dialysis. The blood comes from the radial artery through a glass cannula, it passes a cellophane window, flows through the hollow axle of the drum into the Visking cellulose tube, leaves the artificial kidney through the other hollow axle, and is pumped back by a rubber tube pump and passes through an air-bubble catcher into a vein of the patient. The rinsing fluid must be clean but need not be sterile, as cellophane and Visking cellulose are impermeable to bacteria. Through the dialyzing membrane molecules go in and out. Therefore we must add to the rinsing fluid whatever we do not want to come out of the blood. At present we use fluid closely resembling in mineral composition normal blood plasma for all patients with acute uremia. It contains no calcium, since calcium would be precipitated by the sodium bicarbonate. Calcium of the blood tends to be removed during dialysis; for this reason the patient, as long as he is connected with the artificial kidney, is given injections of calcium gluconate. Glucose is added to the rinsing bath in the concentration of 1 per cent in order to prevent hemolysis. If the patient has edema still more glucose is added, in order to attract edema fluid into the rinsing bath.

The clinical result in the first series of 15 patients was not promising. Only one patient survived and he would perhaps have survived without the aid of the "artificial kidney," so that the only thing this observation can prove is that it is possible to be alive after dialysis. Of the second series of 16 patients, there were six survivors; of the 10 who died nine had chronic renal disease with contracted kidneys. Examples are taken from the group.

A 13-year-old girl who was soaked through in a walking contest, developed acute glomerulonephritis and had anuria for a week. At admission she had pulmonary edema and pneumonia. She was given oxygen and penicillin and the "artificial kidney" was filled with her blood in order to reduce the pulmonary edema and the blood was returned after dialysis. Recovery was uneventful.

A man of 23 years took a teaspoonful of bichloride of mercury. By peritoneal lavage 39 grams of urea were removed in 24 hours. Lavage was discontinued because of swelling and pain in the abdomen, which are not unusual after mercurial intoxication. Then the "artificial kidney" was applied, and 108 grams of urea were removed in nine hours. Diuresis started and the patient is back at work now. Another case of mercury poisoning treated with BAL (British anti-Lewisite) and with the "artificial kidney," ran very much the same course.

Dialysis is not an ideal treatment for chronic uremia. We may have something better for the future.

I hope that I will come back to this country after a year or so and that then I may show you, or you may show me, a patient who is doing his work in the daytime and who is dialyzing himself through his intestinal loop during the night and in whom both kidneys will have been removed as useless, superfluous, and even dangerous organs.

\*Lecture delivered at the Mount Sinai Hospital, N. Y., March 21, 1947.

## Treatment of Thyroid Disease\*

JAMES W. TANKERSLEY, M.D., Greensboro, North Carolina

**MY REMARKS** will concern themselves with the preoperative and postoperative treatment of thyroid disease, with a preface that, so far as I know, thyroid conditions are still surgical problems, not medical.

John Jay, in 1943, surveying health conditions of persons engaged in producing sulfathiazol, found that the thyroid was considerably enlarged in these men; but on taking metabolic tests, and finding them to be mostly minus, he did not pursue the subject further. McKinney, McCollum and Atwood in England found goiters showing increased vascularity and activity of thyroid in those patients who had been given sulfonamides. This led him to believe that there was some value in sulfonamides. Following this, these investigators made an exhaustive study of 300 different compounds. They tried a combination of thiouracil and sulfathiazol. They found methyl thiouracil ten times more efficacious than thiouracil in experimental work on dogs, and five times more efficacious than thiouracil in human beings. That is especially significant because methyl thiouracil is not nearly so toxic as thiouracil, and so it may supplant thiouracil altogether in the treatment of thyroid cases.

Cookson, of England, in his report on the use of thiouracil, declared its effects equivalent to those resulting from subtotal thyroidectomy. He is the only authority I have seen quoted as claiming quite so much for thiouracil. I have no right nor disposition to question Cookson's results or his reasoning therefrom. I only question whether enough thyroid was removed in these subtotal thyroidectomies, to get maximum relief from the operation.

One advantage in giving thiouracil treatment is that you can give it to ambulatory patients. The patients do not have to be confined to the hospital. The dose is anywhere from 0.2 to 0.6 milligram per day, and it is well to start with smaller doses and gradually increase to maximum, and then reduce the dose when the basal metabolism rate is brought down to a stabilizing point. However, when I get the B. M. R. down to a safe level to operate, I still prefer to operate, and not take a chance on thiouracil doing the same work as the subtotal thyroidectomy.

Pluto, Christiansen and Watson claim that thiouracil possibly prevents hormone stimulation of the anterior pituitary. Under treatment they show a smaller amount of thyroxin in the gland. They also show increased elimination of iodine in the

urine. In other words, iodine is increased in production and thrown off excessively through the urine.

Now the question comes up—with all the good points of iodine, why should we use thiouracil. It has been stated by quite a few authorities that it takes as many days to reduce the metabolic rate to normal as the plus points are above normal. In other words, if you have a plus 60, it takes 60 days to bring the rate down to normal. I still insist that toxic thyroid disease is a surgical condition. It is true your patient may go along for a long period getting ready for operation at home, but some patients do not take to it kindly and cannot continue to take the treatment; and there is prolonged disability of the patient that is unnecessary, when we still have iodine that can control the patient's condition more rapidly, intravenously if necessary; although I hold that quick bringing down of the metabolic rate with intravenous iodine will not put the patient in good condition for operation. If I were the patient, I would rather have my basal rate brought down gradually with the hope of no complications following the operation.

I had three patients to show this afternoon but unfortunately two did not show up, so I am only able to show one patient with whom I used thiouracil with unsatisfactory result. If you can reduce the basal rate with thiouracil and keep it down for a long period of time—and we have no assurance at the present time that this is going to cure the patient—if you can do that, you still run into an element of danger. The mortality rate in operations on the thyroid is from two-tenths of one per cent, up to as much as two per cent in some hands. The mortality rate reported for thiouracil is one per cent. Mind you, I said mortality rate. Complications may ensue as a result of thiouracil ranging from 10 to 23 per cent. That is a pretty high incidence of complications that can arise in giving the drug while getting the patient ready for operation.

What are the complications? Headache, joint pains, some fever, skin rash, and—the most important of all—the development of a leukopenia that may persist, and in some cases prove fatal. I have had no experience with marked leukopenia in these cases because I haven't used thiouracil in a sufficient number of cases, or over a long enough period of time.

Preliminary to operation you may use thiouracil if you have a very, very toxic patient, or one having a cardiovascular disease condition, where you want to take more time to reduce the metabolic

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rate gradually. In some of the cases that iodine fails to control the B. M. R., you may use thiouracil, and in some cases that have had x-rays used and do not respond to iodine. Then again you run across patients who decline surgery, in which thiouracil may be continued over long periods. However, in these cases a high incidence of leukopenia may develop.

The patient I want to show you is 20 years of age, although she doesn't look it. Dr. Davis, will you have Mrs. Nash come in? She had lost considerable weight and had typical symptoms of toxic thyroid. Her eyes showed no signs except considerable protrusion. She was under treatment from January until May with thiouracil. She did not respond satisfactorily to thiouracil in maximum dosage, so finally I put her in the hospital to keep her under closer observation and be sure she was getting the right dose of the drug, to keep tab on the blood, especially the white cells, and do the things we like to do every week when we give certain drugs. In the hospital, in spite of the fact that she was getting a near maximum dosage of thiouracil, her B. M. R. dropped only to plus 46. We then allowed her to go home and continued treatment because she didn't want a prolonged stay in the hospital.

There she had the unfortunate experience of breaking her fibula. In treating the fracture, I used the intramedullary stainless steel pin. It was absolutely impossible for me to reduce the fracture—I am not an expert anyway—of the fibula, by closed method and the bones continued to override the lower side, and touch the tibia, the outer fragment extending outward. Under local anesthetic I cut down on the bone, approximated the two bones, drove a steel pin through the fibula and up through the medullary canal and got perfect alignment. A recent picture shows, in spite of her toxic condition because of the thyroid, that the bone healed perfectly, and I venture to say there isn't a man here that could tell where the fracture was a year ago. I have had a number of fracture cases where I used the intramedullary splint and am very enthusiastic for this method.

Now the patient came back into the hospital and we tried to get her metabolic rate down, both with iodine and thiouracil, but were unable to get

it under 75 by any medical treatment. In September—mind you, she had been under treatment from January to September—in September, I did a two-stage operation, removing practically all of one lobe—the one that seemed to be the most diseased—and left a small piece of the other lobe. After each operation she made an uneventful recovery, and the first of this month a test showed her B. M. R. to be normal, and I hope she is going to stay normal.

This is the only case since the introduction of iodine—about 1922 or 1923—in which I have had to do a two-stage operation, and the only reason I did in this case was the impossibility of bringing the B. M. R. down.

Now in these cases where we are giving thiouracil, we like to make a white count frequently to see that there is no leukopenia developing. I am going to stick to my iodine. If the patient declines operation or is extremely toxic, or has grave cardiovascular disease I believe in giving thiouracil until such time as you can get the B. M. R. down to where it is safe to operate. The objective is to get the patient in favorable condition for operation. Giving thiouracil in these cases is helpful, and you can cut it out two weeks at least before you are getting ready to operate, and then put the patient on iodine; if you don't, you will find the operation is made extremely difficult with a large amount of oozing and other impediments. We had in this case an exceptional amount of oozing. I try to get complete control of all oozing, because I practically never drain these cases. A woman is, and rightly, concerned about the looks of her neck, and dreads the idea of an unsightly scar, and I have never seen one drained that didn't have a bad-looking scar.

If a leukopenia develops what are you going to do? This is where we get deaths in thiouracil-treated cases. The only thing I know to do is to give pentnucleotide intramuscularly until, if possible, you bring the white count to normal. As I say, so far, I have had no experience with it because I have not had a drop in the white count to where it was the least bit dangerous.

If there are any questions I can answer, I'll be only too glad to. If I can't, I'll refer them to some of you who can answer them better than I.



# Hyperthyroidism and Diabetes\*

## Case Report

GEORGE THOMAS WOOD, M.D., High Point, North Carolina

**D**IABETES mellitus and hyperthyroidism, either primary or secondary, are two separate and distinct disease entities, are fundamentally different in chemistry and are mutually antagonistic. Some of the beneficial effects of insulin are due to its inhibitory action on both glycogenolysis and glycolysis. It follows that insulin and thyroxine are antagonistic. Hyperthyroidism, with its elevated B. M. R. and increased glycogenolysis, imposes an added burden upon the inefficient carbohydrate metabolism of the diabetic patient. The combination of excess thyroxine and diminished insulin may activate a latent diabetes or project a mild diabetes into a severe diabetes. These two basically different diseases should not be allowed to exist or continue together over a long period of time in the same patient.<sup>1</sup>

It is not unusual to find glycosuria in hyperthyroidism, and occasionally a hyperglycemia, and because of these conditions it is necessary to rule out diabetes which occurs relatively commonly. Joslin mentions the figures of 1.52 per cent for the incidence of hyperthyroidism in diabetes, and 3.15 per cent of diabetes in patients operated on for thyroid disease. In other words diabetes seldom precedes hyperthyroidism, whereas, hyperthyroidism preceding diabetes is more than twice as common. Wilder of the Mayo Clinic pointed out that a mild diabetes may become very severe upon the onset of hyperthyroidism where iodization or operation may cure the diabetes. However, even after such apparent cure, a glucose tolerance test still reveals latent diabetes. Although the average life span of these combination cases is, according to Joslin, not materially shorter than that of the ordinary diabetic, the surgical risk is definitely higher. In the report of Joslin and Lahey in a series of 119 cases a mortality rate of 3.2 per cent was observed, which exceeded Lahey's rate for hyperthyroidism alone by three times.<sup>2</sup> The necessity for surgical intervention, however, is often definite especially because of the progressive weight loss of the hyperthyroid diabetic resulting both from his increased metabolism and loss of sugar.

### Case Report

*Present History:* This patient is a 31-year-old white woman, mother of two children, who was admitted to the hospital Jan. 5th, 1947. Her symp-

toms date back to Dec. 11th, 1946, when she complained of nervousness, weakness, tachycardia, irritability, increased appetite, hyperhidrosis and beginning weight loss. She had a tonsillectomy on Dec. 15th, 1946, because of these symptoms but failed to improve. She was seen by her referring doctor on the second of Jan., 1947, and was hospitalized as soon as possible. During the month of December she lost 20 pounds and all toxic symptoms increased to a marked degree. Polyuria, polydipsia and pruritus did not occur.

*Family History:* One brother died at age 23 after having had diabetes four years. Otherwise non-contributory.

*Past History:* In 1944 the appendix and a tumor of the uterus were removed.

In September, 1946, she had a nasopharyngitis, suspected of being diphtheria, but this was ruled out. The hospital record at that time revealed a normal urinalysis without sugar and the Wassermann reaction was negative. The blood count was within normal limits. A basal metabolism test was not performed.

*Menstrual History:* Regular cycle 28/5—no intermenstrual bleeding. No miscarriages. Two full-term pregnancies nine and eleven years ago.

*Physical examination:* Examination showed a nervous thin restless woman of 31 who was lying in bed, but could not remain quiet. There was no exophthalmos. Her weight was 98 pounds.

*Head and neck:* There was a soft symmetrical moderate enlargement of the thyroid, movable on swallowing, and there was a bruit over both lobes.

*Heart:* Pulse rate varied from 95 to 110, and was regular. Blood pressure varied from 130 to 140 over a diastolic of 60 to 70. There were fine tremors of the hands, and the skin was warm and moist. Other physical findings within normal limits.

*Laboratory findings:* Blood count showed 14½ grams of hgb., 4½ million red cells, 8,550 white cells—polys. 47, lymphs. 48, monocytes 2, eosin. 2, baso 1. Urinalysis was negative except for 4-plus sugar—no acetone or diacetic acid. Basal metabolic rate was plus 45 per cent.

### Treatment

(1) Preoperative: The patient was put at absolute rest in bed. The diet was high-protein, high-vitamin, with a moderate quantity of carbohydrate. It was undecided whether this was a true diabetes or not. Medication consisted of phenobarbital grains ½ four times daily as a sedative. Iodine

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was given in the form of organidine, 100 minims daily in 1000 c.c. saline, as popularized by R. B. McKnight. On the fifth day after beginning iodine her B. M. R. was plus 8 from a previous plus 45. The blood sugar was 158 mgm. per cent and urine sugar was 2-plus. No insulin was given prior to operation. It is significant that she failed to gain weight.

*Operation:* A subtotal thyroidectomy was performed on Jan. 15th, 1947. Local anesthesia of 1 per cent novocaine was the only anesthetic used; however, good sedation was obtained with nembutal and morphine. Silk technique was used throughout and the wound was not drained. There were no untoward symptoms during or immediately after the operation.

*Post-operative treatment:* The usual sedation was used, consisting of morphine, gr. 1/6, every four to six hours for pain. Organidine 100 min. in saline was given by vein and liquids by mouth. As soon as the patient tolerated a general diet she was given whatever she would take, the diabetes being controlled by giving insulin as indicated by the amount of urine sugar. It is desirable to use plain instead of protamine zinc insulin in situations of this kind. She was out of bed the second post-operative day, the sutures were removed on the third day and she was dismissed from the hospital the fifth day.

Before discharge, due to the persistence of glycosuria, a glucose-tolerance test was done with the following results:

Fasting sugar	133 mgm. %
Second hour	334 mgm. %
Third hour	308 mgm. %

At the height of the test the urine sugar was four-plus.

She was placed on a rigid diabetic diet—1665 cal.—C. 143—P. 60—F. 96—instructed about testing her urine and impressed with the need of reporting to her referring physician at frequent intervals.

*Pathology:* Each lobe of the resected gland measured 6 x 3 x 2 cm. There were no nodules. The microscopic diagnosis was: Hyperplasia of the thyroid with marked lymphoid tissue increase.

*Subsequent course:* Since leaving the hospital she has gained more than 20 pounds; last weight on Feb. 15th, 1947, 120 lbs. She is following her diabetic instructions and at present appears to be relieved of her hyperthyroidism.

#### Comment

(1) A patient with acute hyperthyroidism with active or latent diabetes has been presented.

(2) Thus far thyroidectomy has not relieved the diabetes.

(3) It should be noted that the glucose-tolerance curve in the uncomplicated hyperthyroid patient does not go as high—usually up to 250 mgm. per cent—and returns to normal much more quickly than the diabetic curve.

(4) These patients require close coöperation between the internist and the surgeon.

I am indebted to Dr. W. W. Tyson for his medical assistance in handling this case.

#### References

1. GUTHRIE, R. F.: *Southern Surgeon*, Vol. III, Feb., '47.
2. GOLDZIEHER: *Endocrinology*.

#### Discussion

DR. R. B. DAVIS, Greensboro: Mr. President, I can't let good papers like the last two go by without discussing them a little bit, not that I know so much about thiouracil and iodine, but I do know that we do have some pretty sick people around here with thyroids every once in a while and sometimes the medical men seem to think that we surgeons are a little slow in doing something for the patients. Usually where the trouble comes up is in doing it too quickly. Thyroid surgery is safe surgery if done after the patient has gotten to the safe stage. Thiouracil bids fair to help us considerably in that, but that is the drawback, as Dr. Tankersley definitely pointed out.

One thing I wanted to ask Dr. Tankersley—speaking about the scars on the ladies' necks, which, of course, is very important, I haven't seen a disfiguring scar if the drainage tube was removed within 48 hours and usually within 24 hours you can remove the dressing which had to be reinforced during the first night after operation to as much as twice the amount of gauze that you put on in the operating room and still within 24 hours the oozing is over. Then you can remove the tube. I prefer to use one tube, half of the tube in each fossa, splitting a small rubber tube and dividing it and letting one go on either side, either fossa, and within 24 hours remove the tube, and I haven't ever been sued for producing an ugly neck. I wondered if he had had experience with draining and removal in 24 hours and still had scar.

DR. RUSSELL BUXTON, Newport News, Va.: I'd like very much to discuss the last part of the presentation, particularly in respect to what Dr. Davis said about the use of drainage. I think it is very important to use drainage and I feel exactly the same way he does in regard to the scar. If the drainage is removed promptly, within 24 or 48 hours (usually in 24 hours), then there is no scar to amount to anything. Most of the scars that I have seen resulted from bad thyroid surgery or poor technic, and they were small—insignificant as compared to the saving of the life of the patient.

I have had occasion to see several near deaths from secretion in the wound immediately post-operatively. Our present technic calls for clip removers, two hemostats, a pair of scissors and dressings to go back to the room with the patient and they stay there for 24 hours. After we feel there is no danger from the pressure on the trachea from secretion or oozing of blood, these instruments are returned to the operating room.

One other thing brought out by Dr. Tankersley; that is the treatment of leukopenia that has resulted from thiouracil. At the present time our standard for treatment is more or less arbitrary. If the white count goes below 4,000 or if the poly count goes below 50 per cent, we consider a patient in danger. Regardless of the count, if sore throat or any skin rash develops thiouracil is stopped. The treat-

ment that we are using at the present time is large doses of penicillin, pentonucleotide, and crude liver extract up to the point of tolerance, and we start with 4 c.c. every four hours until the count comes up. The exact dose must be judged by the size and weight of the patient.

I certainly agree thoroughly with the statement that thiouracil does not take the place of surgery. Its continued use should be reserved for those cases in which surgery is not feasible because of the general condition of the patient; also for the secondary operation in which surgery may be dangerous. The series of cases that have been treated over a long period of time show that, regardless of how long the drug is given, when it is stopped the patient still has hyperthyroidism.

DR. J. W. TANKERSLEY (closing): I want to thank Dr. Davis and Dr. Buxton for their discussion. I think it is a mistake to make a positive statement to never do so and so. A man who never does so and so never does anything.

As to drainage, I said I practically never use drainage. So far, I have no reason to regret it. I have drained when, in the course of an operation, bleeding occurs that I can't control, especially oozing. I can nearly always control bleeding from the vessels, but capillary oozing is another matter. In those cases I might use drainage, a little soft rubber in each corner of the wound, and take it out in 24 hours. I see that that makes no difference in scar because the skin promptly falls together and unites without excessive production of fibrous tissue.

The untoward symptoms that Dr. Buxton enumerated I think immediately call for cessation of thiouracil and substituting some other form of treatment. Any time untoward symptoms show up, it doesn't make any difference what they are—rash, pains in the joints, enlarged glands, leukopenia—the drug should be stopped immediately, and iodine substituted, intravenously or by mouth, as you wish. I would like to emphasize that and emphasize it strongly.

In regard to Dr. Taylor's question about the new drug used, it is methyl thiouracil, but it hasn't been available on our market. It is ten times more active in animals and five times more active in human beings than thiouracil, and so far hasn't shown the untoward effects of thiouracil. Another drug that is being used experimentally is irradiated iodine and in those cases where irradiated iodine is given—it is purely experimental at the present time—it reduces the size of the gland, and also reduces the B. M. R.—may bring it below normal. In some of the experimental cases myxedema was produced. Irradiated iodine is hard to control, particularly in the thyroid gland. There is a possibility that it may destroy the function of the gland altogether, destroy the hormones, the colloid material, in fact everything within the gland.

I think we are going to take important forward steps in the treatment of thyroid diseases in the next few years, including the introduction of many new drugs.

DR. F. R. TAYLOR: What about the four-plus sugar and positive Benedict test?

DR. TANKERSLEY: My experience with that is too limited. I have only had one case that I recall offhand with diabetes, and that patient got along all right, but I didn't cure the diabetic condition.

DR. GEORGE T. WOOD (closing): The case was presented as a matter of hyperthyroidism activating an unknown latent diabetes, which I think is an important thing. With the question of glycosuria and hyperthyroidism we are all acquainted. When you do get excessive reaction of urine sugar in a hyperthyroid case, I think you should not be satisfied until you rule out the question of true diabetes.

In discussing Dr. Tankersley's thiouracil, the question comes up as to when thiouracil is indicated, what cases are we going to select for it? I call to mind Dr. Adams

in Boston made an informal statement that we modify the old "rule of 50" and make it the "rule of 40" for thiouracil, i.e., a patient over 40 who has a BMR over 40, pulse of three times 40, weight loss of half of 40, could be considered a candidate for thiouracil as a preoperative measure.

#### OSTEOPOROSIS OCCURRING DURING POTASSIUM THIOCYANATE THERAPY FOR HYPERTENSIVE DISEASE

(J. J. Hinchey et al., in *Proc. Staff Meet. Mayo Clinic*, July 9th)

Following the extensive use of potassium thiocyanate in treatment of hypertension, we have noted occasional instances of osteoporosis and arthralgia. Previous description of the phenomenon could not be found, so further investigation was undertaken.

The records of 5,000 consecutive patients with hypertension who had been seen on two or more occasions in the period from 1939 through 1944 were reviewed. Potassium thiocyanate had been given to 360 patients of this group. Unexplained osteoporosis occurred in seven. Since 1944 four additional cases of this type have been encountered—an incidence of two per cent.

Cessation of treatment with potassium thiocyanate was followed by relief in every one of the 11 cases, whether or not specific measures of treatment of the osteoporosis were used.

Improvement was generally evident in from two to three months and complete in from five to seven months. Use of the drug was resumed in four instances. In two neither the symptoms nor the osteoporosis recurred. Symptoms recurred in the other two and were again relieved when administration of thiocyanates was once more discontinued.

#### MANAGEMENT OF DERMATITIS IN GENERAL PRACTICE

(Stephen Epstein, Marsfield, in *Wisc. Med. J.*, July)

We usually reserve the designation dermatitis for the more acute cases and eczema for the more chronic ones.

For the proper management of dermatitis:

We should treat the condition of the patient and not a diagnosis.

Restrict our medications to a limited number of prescriptions and should familiarize ourselves thoroughly with their application.

Become conscious of drug eruptions and always watch out that the skin condition or its flare-up is not due to our medication.

Give specific instructions and make sure that they are properly carried out.

Realize that a dermatitis is a phenomenon of sensitization.

Treat the patient also from a general and psychological viewpoint.

#### MOTION SICKNESS AND ITS RELIEF

(Frederic Damrau, New York, in *Med. Rec.*, July)

In the therapy of motion sickness scopolamine hydrobromide is an efficient agent for the prophylaxis and treatment. The aminoxide possesses only about one-sixth of the toxicity of the parent substance—the hydrobromide. It is now available in a form convenient for use in motion sickness under the name of Scopodex Pellets.

Because of lower toxicity, high effectiveness and shorter duration of action, scopolamine aminoxide hydrobromide has advantages over the parent drug in the prophylaxis and treatment of motion sickness.

## VARICOSE VEINS\*

W. W. HARVEY, M.D., Greensboro, North Carolina  
Piedmont Hospital

**V**ARICOSE VEINS have been described and treated since the time of the earliest writers including Hippocrates.

The pathology consists of: 1) elongation and tortuosity, 2) loss of elasticity, 3) dilatation of veins, 4) increased or decreased thickening of walls, 5) disappearance or atrophy of valves, and 6) enlargements of collaterals.

Etiological factors include: familial tendency, pressure on veins, pregnancy, certain occupations, and inflammation.

Varicose veins occur more frequently in women than in men.

The principal symptoms are: legs tire and become painful on standing, legs feel heavy, swelling and itching of the extremity, secondary dermatitis, and ulcers on leg which are especially hard of healing.

Treatment is 1) conservative, 2) active or radical.

The conservative treatment consists of rest, elevation, elastic bandages, elastic stockings, etc.

The accepted active treatment is injection of a sclerosing agent, or a combination of ligation and injection of a sclerosing agent.

The veins that give most trouble are the long saphenous, which is the longest vein in the body, and extends from the toes to the groin; and the short saphenous, which extends from the toes going up the back of the leg to the knee.

Before any operation or injection, tests should be made to determine if the deep veins are patent and functioning, and to determine if the arterial circulation is normal. On a patient having marked arteriosclerosis, or Buerger's disease, operative treatment or injections are positively contraindicated.

Compression test for patency of deep veins: Place a tourniquet around the upper part of the thigh and have the patient walk; if the deep veins are patent the suction produced by muscular contraction and relaxation will draw the blood from the saphenous veins into the deep veins, and the varicosities will diminish in size or completely disappear. This test should be applied at various levels of the leg, as there may be more than one point at which the blood from the deep veins is spilling into the saphenous.

Simple and useful is the histamine test for patency of the arteries. One drop of sterile histamine phosphate, 1-1000, in normal saline is plac-

ed on the skin of the leg previously prepared with alcohol; several punctures are made through the drop with a fine needle. A red flare around a wheal occurs in 2½ minutes. The promptness of the appearance of this redness, which is due to vaso-dilatation, indicates the adequacy of the blood supply.

Technique of injection.—The leg is cleansed and prepared surgically and, with the patient standing, the needle is inserted into the vein. Then pressure is made above the vein, which allows the blood to drain downward. Then pressure is applied below the site of the needle for one minute after the injection has been made; then a pressure pad is secured over the site of the injection. Numerous sclerosing agents are used, but the best is quinine and urea, or one of the soaps—as sodium morrhuate. This is an office procedure and brings very gratifying results, for a short or long period of time, but the veins almost invariably recanalize and the varicosities return. I have one patient whose veins I have injected this way three times in the past twelve years.

The most satisfactory cure is combination ligation and injection. The groin is prepared as for a hernia operation. The incision is made two finger-breadths to the inner side of the femoral artery, which can be felt pulsating. The incision is downward and slightly medial and should extend up to the level of Poupart's ligament. The most frequent mistake is to make the incision too low, so that the tributaries of the upper end of the saphenous vein cannot be tied off. The vein before it is exposed can be seen as a bluish discoloration through the fat. The vein is isolated for a distance of some four centimeters, the superficial iliac is isolated and ligated as well as the external pudendal and the external superficial femoral. These, unless ligated, will spill back high and almost certainly become varicosities. Then 5 c.c. of the sclerosing agent is injected into the ligated end and the patient lies still for an hour, then may get up and walk out of the hospital—should walk around some every two hours—and at the end of 72 hours may resume his regular occupation.

This operation is comparatively simple, yet as many permanent cures are obtained by its use as with the Mayo stripping operation.

Ulcers on the leg heal almost like magic following this operation, and it is particularly effectual in laboring men who have varicose veins and sustain injuries that as a rule heal very slowly. The patients are usually well satisfied and grateful for the relief afforded by this comparatively simple operative procedure.

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgfield Inn, Greensboro, N. C., March 3d and 4th.

## Religious and Similar Experiences and Revelations in Patients with Alcohol Problems

ROBERT V. SELIGER, M.D., Baltimore

ON THE inside flap of the jacket of *The Varieties of Religious Experience*—William James—Modern Library, one finds the following:

"It is both as philosopher and experimental psychologist that William James approached the study of religious phenomena. Conversion, repentance, mysticism, hopes of reward and fears of punishment in the hereafter are studied with boldness, sympathy and the unbiased common sense of science. The result is a book that has become a living force in religious literature, for believer and non-believer alike, and has contributed to maintain William James's status as the greatest American philosopher."

Perhaps the most significant feature of all true religious experience is found in the redirection of the individual's center of interest from himself to those about him. In so doing, the attention of the individual is no longer focused upon his own misfortunes, pains, and misery. Furthermore he rises above the unpleasant experience formerly produced by the remarks, actions, and/or attitudes of others. Where he once held bitterness towards his supposed malefactors he now attempts to understand wherein he has been at fault so as to prevent the above-mentioned blows. In addition to this, whether or not he understands the reason for these blows he forgives wholeheartedly those who have thus hurt him.

In adopting such attitudes, which come only with true religious experience, the individual becomes a giver instead of a taker; an asset instead of a liability to his fellowmen. In so doing he himself attains real tolerance of himself and of all others, and that most desired goal in life, peace of mind. Then, and only then, has the individual reached emotional, intellectual and spiritual maturity.

The following description and interpretation of the meaning of religious experience will be that of a physician who will attempt only to present briefly those cases reported by three patients.

*Case I.*—For many years, Mr. A. was, as he thought, a drinker, having his drink under control. In 1942, he became aware that his drinking was ruining his domestic, social and business life. He sought and received brief psychiatric care at "The Farm," leaving against medical advice. For one year, he remained abstemious, at the end of which time he began drinking socially. Soon he began to drink to excess periodically. Once more the deleterious effects upon his life became manifest.

Mr. A. had for many years been a member of the Episcopal Church, but, first with business, then with drinking, he came to pay only rare lip-service to the God in whom

he believed in a vague sort of way, or to call on Him when desperate, hard-pushed, or beaten down by the panic of a hangover. He expected little from these outbursts of piety, and received in kind. Then, during his second alcoholic experience, in 1943, he came under the guidance of the rector of his church, from whom for two years he received individual and careful commonsense instruction from this man. As a result, he has been not only abstemious, but what he terms a practicing Christian for the past 3½ years.

As a result of his faith, but more especially of the daily practice of this faith, Mr. A. has found "peace of mind, as never before." His religion may be outlined as follows:

1. Belief of and faith in a *personal* God. This accomplished, faith in one's fellowman and one's self will follow of necessity.

2. Daily prayers of gratitude and for guidance, *not* for gifts. God has given us the equipment in our bodies, minds and souls; it is our responsibility to use them.

3. Aggressive practice of religion through action. Service to one's fellowman must be given daily, unstintingly, and *gladly* with the full and constant realization that these services are God's, man being only God's instrument of execution.

*Case II.*—Mr. W., helped through a religious experience, was a 67-year-old man about whom I was consulted in the spring of 1945. This patient, an able executive and administrator, had been going on alcoholic sprees for a period of nine months. I asked him to enter a sanatorium for help. He refused; so I advised his doctor to have him taken by ambulance to a psychiatric hospital. After he had been there for a week he said to me: "I had stopped drinking for 15 years before I started this time. I knew that I couldn't handle alcohol in any form, but during the summer months at lunch time I just thought a cheese sandwich and a beer would taste good. That's the way I began this time." (A beginning which ended with my being called in to see him, after he had been brought home for many months around 5 a. m. by people of no very high repute.)

He then asked, "Would you like to know how I stopped by myself fifteen years ago?" and, when I expressed interest, he went on, after saying, "it may sound funny to you" to tell me how he had been drinking for years until 1930 when this episode had occurred. After a heavy evening of alcoholic indulgence the next morning he felt very shaky, with red face and eyes and a coated tongue, and wondered what his associates would think of him if he did not show up for his business activities that day. He added, "You know how a mouse feels with a couple of drinks, like he wants to lick a lion, so I took a few additional drinks and then felt worse than ever. I felt myself getting into a kneeling position to pray, and started to pray to the Lord. While doing this I suddenly felt a pair of arms embrace my body, and heard a voice say: 'Henry, if you want to destroy yourself, continue to drink!'" From that day, fifteen years before, until 1945 the patient said he did not touch any alcoholic beverage; every night he prayed and thanked the Lord for his not taking a drink.

I told him his story wasn't funny, but a sort of religious conversion experience, and that I would bring him a book. On my way over from the hospital, I purchased two Modern Library editions of *The Varieties of Religious Experience*. That evening I gave one copy to the patient and told him that he perhaps would enjoy reading the chapter

on Conversion. The next morning he said he would like to see me some more. So I went into his room with him and he told me that he had been awake until 2 a. m. reading the book, then had bent down on his knees again to pray, had had the same experience that he had fifteen years ago—the feeling of being embraced by a dead relative who told him that if he wanted to destroy himself he should continue to drink. He concluded by saying, "Doctor, if we are both alive 20 years from now, you will see that I have not touched any alcoholic beverage whatsoever."

Two years have passed and the patient is still active in business, and abstinent. Every month or so he telephones and inquires about my health!

**Case III.**—Mr. O. had a revelation last May. While neither a religious man nor an agnostic, he feels he has experienced a scientific miracle, differing from a religious one in which the sensations evoked are emotional, solemn and tender. In his own words: "It was just wonderful. I can't describe it. There wasn't any personal communication with God. I just felt wonderful." Mr. O. had been attending college, majoring in mathematics and doing brilliant work. A few weeks before the end of his last term he felt disgusted with his philosophy of life and doubtful of future success in a progressive commercially-minded society. Despite the protests of his teachers and parents, he packed his clothes, a few tins of food and dried fruit and a volume of Plato, had a friend drive him to the foot of the nearby mountains, the friend promising to return for Mr. O. in ten days.

During the first three days of his sojourn there, Mr. O. ate no food and wandered aimlessly from one mountain ridge to another, camping whenever he felt the need of sleep. It was on the fourth day that he witnessed his revelation.

He had set out on a long tramp when a storm overtook him and forced him to retrace his steps. He became lost, blundering through thick briar-patches, and finally got panic-stricken as the wind and rain drove him from one rocky area to another. When he regained his reason and tried to think things out for himself, Mr. O. was sitting beneath a tree and holding a baby rabbit in his hand. The small motionless animal calmed him, and as he felt the tiny bones of the rabbit, he thought, "If this baby rabbit isn't frightened by the storm and can survive it, why so can I! There's nothing for me to be afraid of!" And at that moment, in all the rain, a fire bloomed and warmed him. Mr. O. said it was as if all his fears and anxieties were absorbed in that fire. He found his way back to camp and ate. Later he had visions of cow-like figures, heads and bodies floating around, a vague memory of an arm protruding through the mud, but these recollections were diffused and he had difficulty in recalling his exact feelings. He was conscious of only one sensation—the absence of fear. Mr. O. said, "I knew somehow—don't ask me to describe it, Doctor—but in some way I knew I could control these visions—make them parade before me just as I wanted to. I felt that I could stop them at any time."

Yet there was one vision which stood out sharply in his mind and which seemed to be repeated. This experience was followed by a reaction of fear, then a gradual return of self-confidence. There were two heads, each one on an individual pole. The left head seemed to be part of Mr. O., and it was terrified because there was a caged tiger near it. The head seemed to think that it might be pushed near the tiger and then devoured, when the right head spoke for the first time, saying, "Why are you afraid? You're not in the cage or even near it yet. Now you have no reason to fear."

Mr. O. returned after his ten days on the mountains. He plans a second trip and hopes to profit from it as

much as he did from the first. He repeats over and over that he did not know or learn the answers to the problems bothering him, but for the first time he was content *not* to know the answers. He felt satisfied and happy for once in his life and, best of all, he himself is responsible for his contented state of mind.

All three of these patients have had experiences which have helped them in their illnesses. All three remain abstinent.

In conclusion, I feel it wise to point out that modern medicine, especially medical psychology, recognizes and welcomes the help given to patients by true, solemn, sober and tender religious attitudes and feelings.

\*Robert V. Seliger, M.D., a Fellow of the American Psychiatric Association and on the Staff of Johns Hopkins, is now active as Medical Director of the Neuro-Psychiatric Institute of Baltimore.

He has published many medical papers and the following books:

*Alcoholics Are Sick People, Psychiatry for You, A Guide on Alcoholism for Social Workers*, and is Co-Editor of *Contemporary Criminal Hygiene*, and the recently published *Handbook of Correctional Psychology*.

#### AN UNUSUAL AND INSTRUCTIVE CASE OF INTESTINAL CANCER

(Karl M. Lippert, Veterans Hospital, Columbia, in *The Recorder*, Aug.)

A malignant tumor of the terminal portion of the ileum is an extreme rarity. Most of the small-bowel neoplasms have been discovered as result of obstructive symptoms.

A 28-year-old white man entered March 10th, 1947, complaining of weakness and fatigability. He had entered the army in July, 1944, and under routine training was easily fatigued, had palpitation, occasionally vomited about breakfast time. He often had lower abdominal cramps and his lower abdomen was always sore on pressure. He was hospitalized as being "extremely nervous."

He was given a C. D. D. in December, 1944, because of what the patient called a "nervous stomach." There was no history of hematemesis, tarry or bloody stools, weight remained about 160. After leaving the army his health improved for a time but when he went to work the fatigue became worse, vague abdominal discomfort more frequent—no relationship to food.

Hospitalized at Fort Jackson his r. b. c. 2,500,000, hgbn. 5.5 grams. No diagnosis. Advised to take iron capsules and dismissed to the care of his own physician. The iron increased abdominal discomfort and stools became very black. His physician discontinued the capsules and gave him iron and liver "shots." Stools returned to normal color, but general condition did not improve and during the three weeks prior to admission to this hospital he lost fifteen pounds.

The patient had an appendectomy in 1939 for an attack of abdominal cramps and vomiting; he was free of abdominal discomfort until he entered the army.

On admission to this hospital weight 136. The liver and spleen were palpably enlarged but not tender, b. p. 152/95; r. b. c. 4,000,000, hgbn. 10 grams, w. b. c. normal. Stools showed 3- to 4-plus occult blood; reds soon fell to 3,500,000 r. b. c., hgbn. 9.8 grams.

*Dr. Henry Potosky (Radiologist):*

After study of the entire gastrointestinal tract, a lesion of the terminal ileum was disclosed, which was believed to be the cause of the bleeding. Rather diffuse, polypoid changes of the mucosa and in one area a well-defined

(CANCER—P. 269)

# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### ALCOHOLIC ALCOHOLISM

THE PRESS reports that recently in a Southern city the prosecuting attorney was called from the court room to give attention to a tragedy in his own home. There his wife was said to have shot to death her husband's father in protection of her own life. And her husband stated that his father, a chronic alcoholic, had been drinking unusually heavily for many months. The son of the slain father had recently returned home from the last World War, in which he had rendered valorous service. The court designated some one to function as the commonwealth's attorney pro tempore in order that the son might be saved from the necessity of prosecuting his own wife for the killing of his own father.

There is nothing unusual in the story. The prominence of the son, as a state official, and his relationship to the two actors in the fatal tragedy, gave the account front-page space in the newspapers.

Alcohol as a factor in criminal behaviour is a story of daily reiteration here in Virginia and probably in all the other states. Both the newspapers of Richmond have lately been discussing the great increase in crime in Virginia, with special reference to so-called drunkenness as a criminal condition.

In Virginia, the state's fiscal year ends on June 30th. Statistical figures indicate that during the state's last fiscal year, with June not included, 42,711 persons were jailed on account of drunkenness. The technical charge was either drunkenness or drunkenness and disorderly behaviour.

And almost 4,000 more individuals—3,783, to be exact—were committed to jails for driving automobiles while drunk. Nor can one doubt that alcoholic intoxication of some degree was a factor also in many other commitments to jails. Many fights, brawls, thefts, forgeries and many so-called sex-crimes are undoubtedly manifestations of alcoholic unrestraint.

The Social Service Bureau of the City of Richmond places alcoholism in parents at the top of the list of the causes of the neglect of children. The deduction is that alcoholism may be the cause of the commission of crime by the individual and that it may also lead through poverty and squalor and deficient nutrition and by general deprivation to criminality in others.

Nothing is said directly in approval of the use of alcohol as a beverage. So used, it often does harm. So used, does it ever do good? If beverage alcohol serves no useful purpose, why do the various units of government make it available to the people and encourage them to use it?

Some of the principal official dignitaries of the Commonwealth of Virginia have become so unhappy because of the increase of drunkenness that they are discussing seriously and scientifically the advisability of providing a great state institution for the treatment of inebriety. Much has been said about what alcoholism is; what its causes are and how the condition should be treated. But neither by the scientists nor by the newspaper editors is much said about the imbibition of alcohol as a cause of alcoholism. The alcoholic is a poorly adjusted, psychopathic individual, so we are told. He is scarcely thought of as a citizen kept chronically poisoned by a toxic substance sold to him by his own government for the purpose of getting from him much more money for the simple pharmacologic substance than it is worth. Federal and state officials, and newspaper editors whose pages carry advertisements of alcoholic beverages, do not often speak in disapproval of the sale by the government of alcoholic beverages.

Yet in preventive medicine the scientific practice is, when the cause of the disease is found, to destroy the cause. If that cannot be done, every effort is made to erect barriers to protect man against the causes of diseases. Health agencies do not try to eradicate typhoid fever and diphtheria and tuberculosis and malaria and syphilis by increasing the causative factors of those diseases and by making those germs and parasites more easily available to the people. Every attempt is made, per contra, by sanitary agencies to lessen the likelihood of ingestion by the people of any substances, germs, parasites, contaminated water, and poisons in general, that will be hurtful to the people's health. The operation by the government of saloons merely as tax-gathering stations constitutes an intolerable insult to preventive medicine.

Quamdiu?

## PEDIATRICS

### IODINE AND FAILING LACTATION

FAILURE of mothers to suckle their babies is a serious medical and social problem. While many such failures are deliberate, in a great percentage the fault is not in the mother's will.

From St. Thomas Hospital, London, comes report of an encouraging experience.<sup>1</sup>

In 500 untreated lactations in St. Thomas's Hospital the infants were test-fed each day during

1. Margaret Robinson, in *British Med. J.*, July 26th.

the puerperium, and were then followed up during the next six months. It was found that failure of lactation before the infant was six months old was rare where the total milk output on the fifth day of the puerperium had been as much as 10 oz. and on the 10th day of the puerperium had been at least 16 oz., nearly all the failures occurring in the first three months of lactation.

Owing to the fact that the patients were being discharged early from hospital on account of shortage of maternity beds, it was possible to treat only those patients who showed signs of failure on the fifth day—those patients whose total milk yield as estimated from test feeds was then less than 10 oz. Treatment was started on the sixth day of the puerperium and continued either until the daily milk yield had risen to 16 oz. a day or until the patient was discharged from hospital. Afterward the mothers reported with their infants when they were four weeks old. Owing to the shortage of beds and the distances the patients had to travel only two consecutive test feeds were possible—either 10 a. m. and 2 p. m. or 12 m. and 3 p. m. The average of the two test feeds multiplied by five or by six (accordingly to whether the infant being fed 4- or 3-hourly) gave a rough estimate of the output of milk per day in the fourth week of lactation, and made it possible to compare the results from treatment with Lugol's solution with the results produced by other treatment.

A total of 99 cases of failure to establish lactation in the puerperium were investigated. Seventy-two were used as controls and 27 were treated with Lugol's solution. All the infants were test-fed on the fifth day of the puerperium, on failure to establish lactation, treatment was begun on the sixth day. In the case of saline injections the treatment lasted for five days. In the case of massage and treatment with Lugol's solution it lasted until the patient was discharged from hospital or until the output of milk per day had reached 16 oz. The subsequent course of each lactation was followed up by two consecutive test feeds done when the infant was four weeks old.

Six drops of Lugol's solution in milk were given by mouth b. i. d. until the yield of breast milk had risen to 16 oz. a day. Twenty-seven cases were treated. Seven had to be discarded for the following reasons: 1) three premature, not fit to be test-fed; 2) three mothers had painful nipples, the patients refused to go on breast-feeding because of the pain; 3) one mother had had lumpy breasts, which became painful after 24 hours' treatment with Lugol's solution. The Lugol's solution had to be stopped, and treatment with oestrogens begun. By the time the breasts were rendered soft and painless with the oestrogens, it was too late to start treatment with Lugol's solution, because had to be discharged.

Failure to establish a satisfactory milk output in women is apparently due to two deficiencies—oestrogens and iodine. The need for oestrogens to control the milk flow through the breast appears in the first four days; the need for iodine to increase the output of milk is from the fourth day onwards. These deficiencies may exist singly or together. If together, the oestrogens must be given first. Until the oestrogen deficiency is cured it is difficult to tell whether there is an iodine deficiency. Giving Lugol's solution to a case with an oestrogen deficiency untreated only aggravates the condition and does not increase the milk output. The sign of an oestrogen deficiency is lumpy breasts with a thick yellow secretion, difficult to express. The sign of an iodine deficiency is soft empty breasts with a scanty secretion of milk. Both oestrogens and Lugol's solution are safe and easy to give. The duration of the treatment is short. The treatment does not upset either the mother or the infant.

The number of patients with older infants who have so far been treated with Lugol's solution for failure of lactation are too few for any conclusion to be drawn. However, the outlook is hopeful, as in three cases out of five in which the mothers took the Lugol's solution for three weeks the infants became fully breast-fed, as shown by a sudden large increase in the weekly weight gain and an increase in the number of stools. The stools return to normal when the bottle-feeds are stopped.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### THE RH FACTOR IN GENERAL PRACTICE

THERE is a real danger that an Rh-negative patient may be sensitized to the Rh factor by the injection of Rh-positive blood; 90 per cent of intragroup transfusion reactions following isoimmunization either by repeated transfusions or by fetal blood during pregnancy occur in Rh-negative individuals. Since 15 per cent of the population is Rh-negative, and since 85 per cent of the bloods obtained from donors at random are Rh-positive, 127 of these patients receive Rh-positive blood. Fortunately, only one in 25 to 50 Rh-negative persons exposed to the Rh antigen by transfusions or pregnancy becomes sensitized and develops anti-Rh substance.

So Langenfeld<sup>1</sup> opens a discussion of the importance of the Rh-factor tests in general practice. And he goes into more detail.

Every patient who is to receive blood transfusion should have an Rh test. When multiple transfusions are contemplated or previous transfusions have been given, it is especially desirable. An Rh-

1. G. P. Langenfeld, Theresa, in *Wisc. Med. J.*, July.



negative individual will tolerate one or two transfusions of Rh-positive blood. But these may serve to sensitize the patient, and additional transfusions of similar blood may well result in a transfusion reaction. The presence of the anti-Rh factor in the serum of the recipient causes an agglutination and hemolysis of an Rh-positive donor's red blood corpuscles.

The signs and symptoms of this reaction are similar to those following the injection of an incompatible blood. The reaction may be mild or severe, depending on the recipient's anti-Rh titer. Treatment is directed at maintaining an adequate urinary output by means of oral and parenteral fluids and the administration of alkalis.

If the patient's blood is Rh tested several hours or even several days following such a hemolytic reaction and the test is examined microscopically, it may be noted that there are clumps of agglutinated red cells, suggesting an Rh-positive test. Close inspection will reveal that the majority of cells are not agglutinated. The latter are the patient's own Rh-negative cells, while the agglutinated Rh-positive cells are donor cells that have survived. A week later, another examination may show only Rh-negative cells.

It is extremely important to be alert to the possible remote consequences in giving transfusions to female patients, including infants. A single transfusion of Rh-positive blood may sensitize an Rh-negative girl or woman so that if a subsequent pregnancy results in an Rh-positive fetus even the first born child may suffer from erythroblastosis fetalis. Sensitization produced by the transfusion of an Rh-negative woman with Rh-positive blood is always the worst form of this disease. In a series of 25 Rh-negative women who had received blood transfusions prior to pregnancy, 18 had two or more infants with erythroblastosis fetalis. Of 32 of these fetuses or babies, 28 died in utero and four lived less than 24 hours.

The most dangerous reactions occur in postpartum women. No postpartum woman can safely be given a transfusion of whole blood without first determining her Rh status.

Once the body cells have been sensitized to a particular antigen, they retain the ability to respond to this antigen for years, usually for life. Repeated exposures to the same antigen provoke increased antibody response.

It is necessary for hospitals to have an adequate number of readily available Rh-negative donors.

The family doctor consulted concerning a child retarded in its mental development should determine whether or not the child was jaundiced shortly after birth, and the degree of jaundice. Patients with erythroblastosis fetalis may recover spontaneously or under treatment, but the severe jaundice

may have been accompanied by a condition of kernicterus resulting in permanent cerebral damage.

#### INTESTINAL CANCER—From P. 266

filling defect. Induration and infiltration of all the coats of 8 inches of the intestinal wall, which was rigid and showed no peristaltic activity. Matting the loops of terminal ileum.

A negative finding of considerable importance is the total absence of stenosis and obstructive phenomena.

I do not believe that an exact differential diagnosis can be made between inflammatory disease and neoplasm.

*Dr. Lippert:*

The patient was seen by medical and surgical consultants. One favored tuberculous infection of the ileum and cecum; another regional enteritis, and that the enlargement of the spleen and liver could be explained as the result of long-standing toxin absorption from the diseased bowel and that the chronic blood loss was acting as a stimulus for hyperplasia of the blood-making centers in these organs. The patient was rapidly prepared for operation by multiple blood transfusions, a high-protein and high-vitamin diet, with sulfasuxadine to chemically sterilize the intestinal tract.

On April 28, through a right-flank incision under spinal anesthesia; mass composed of the last 18 inches of the small bowel, adherent to the cecum, pelvic peritoneum and to itself in convoluted loops, was delivered. Because of the unusual appearance a wide excision was done, all of the colon up to the mid-transverse portion being included.

Pathologist—Diagnosis: Adenocarcinoma, ulcerated, anular, Grade III, of the terminal ileum.

A rare tumor. Carcinoma of the jejuno-ileum form about 3% of intestinal carcinomas.

The postoperative course was uneventful except for tarry stools for two days, apparently from the raw surface at the site of the anastomosis. Patient up and about ever since three weeks after operation, home for a brief vacation and has gained 15 pounds. He has returned for further therapy.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### THE USE OF PENICILLIN IN CERTAIN UROLOGICAL CONDITIONS

THE VALUE OF PENICILLIN in urology is great, as a prophylactic and as a cure. This paper<sup>1</sup> considers only the possibilities of penicillin in the treatment of those patients in whom active infection is established, excluding cases of venereal disease.

An illustrative case is that of a woman, aged 56, with a history of cystitis for the past 12 to 14 years, had pain, intermittent haematuria, frequency and scalding on micturition. Cystoscopic examination disclosed a severe cystitis, just as had been found 10 years earlier in this case. Urine contained many pus cells and Gram-negative bacilli, and cultures yielded a growth of *Proteus morgani*, which was sensitive to 50 units of penicillin per c.c.

1. A. L. P. Peeney, in *Proc. Royal Soc. of Med. (Lond.)*, June.

She was treated by the instillation into the bladder twice daily of 100 c.c. of saline containing 200 units of penicillin per c.c., and instructed to retain this for as long as possible. Five days after the treatment started a catheter specimen of urine showed no pus and a very scant growth of Morgan's bacillus. Treatment was continued for 14 days at which time there was no pyuria and cultures were sterile.

She was discharged from hospital after 31 days, free from symptoms and with a clean urine. A letter 12 months later informed that she felt extremely well and complained of no urinary symptoms.

This unusual method of treatment was decided on because the patient was extremely averse to injections. The obvious contraindication to this form of therapy is repeated catheterization with the attendant risk of the introduction of penicillin-insensitive microorganisms.

In another case, although the patient's original infecting organisms were eradicated, she was left with a mixed pyocyanous and anaerogenes infection, which was insensitive to penicillin. The gross anatomical change in the bladder greatly militated against the therapeutic possibilities of any treatment. Subsequent history proved such to be the case, and Mr. Donovan transplanted the ureters into the pelvic colon.

In still another case, the originally isolated staphylococcus differed in its coagulase reaction from the strain present in the later stages, which suggests that the original invader had been effectively removed by the systemic penicillin. Nevertheless, it did not reduce his tendency to relapse. Although his infection was readily amenable to penicillin, we should have given him a much longer course of treatment, since there was the possibility of a deep-seated, relatively inaccessible, focus, either in the kidney or prostate.

In all cases it is essential to determine the sensitivity of the infecting organism to penicillin, to see that the necessary concentration is being maintained in the urine, and to assess the result of treatment, both clinically and bacteriologically. Even when such conditions obtain, it is almost certain that relapses will occur, due to anatomical deformity of the passages or the presence of inaccessible foci—possibly in calculi, deep crypts, prostatic abscess or necrotic tissue, some of which would not be influenced even by high blood concentrations.

A small number of patients with urinary calculi and infection have been treated, and although they have, on the whole been materially improved, failure to eradicate the infection was frequent. This was almost certainly due in large measure to the calculus forming a reinfecting nidus.

The presence of calculi in eight cases investigated led to failure of penicillin to destroy the infection, though four of these cases were cleared up with penicillin after the removal of the calculi. Bodner and Moulder were able to sterilize the urine of a patient with recurrent calculus formation and a staphylococcal infection with small doses of penicillin after all other forms of therapy had failed. This patient's urine was still sterile and there was no evidence of recurrence of calculi nine months after discharge.

In all urinary infections which resist other forms of treatment, and especially those due to the *Streptococcus faecalis*, penicillin may afford the only satisfactory therapy. Penicillin should be considered in patients sensitive to the sulphonamides or where, for any other reason, the use of these drugs is precluded.

It may be that streptomycin with its wider range of activity against the Gram-negative bacillary forms may offer better possibilities, but it is not free from toxic effects and so far is in very short supply. It seems preferable to look forward to the time when penicillin may be synthesized, in the hope that by some rearrangement of its molecule we shall be given a product of wider activity and with increased stability, so that patients may be spared repeated injections and an equal degree of susceptibility be introduced into the ranks of the Gram-negative bacilli as now exists in those of the Gram-positive cocci.

#### THE OPHTHALMOSCOPE IN HYPERTENSION PROGNOSIS (Wm. C. Blake, in *Jl. Fla. Med. Assn.*, Aug.)

In a case of hypertension if the retinal arteries are normal in appearance, other factors being equal, the prognosis is good. On the other hand, given a patient with hypertensive disease who otherwise appears healthy, but in whom these arteries are found tortuous or elongated, show the broadened light reflex, compression of arteriovenous crossings, or the silver-wire appearance of extreme arteriosclerotic change, this patient has a very poor prognosis regardless of his age and regardless of the degree of hypertension.

#### SKIN MANIFESTATIONS OF MENSTRUATION (Kurt Wiener, Milwaukee, in *Wisc. Med. Jl.*, July)

Menstruation is frequently (38 per cent) accompanied by skin eruptions of some sort, acne and herpes being the most common ones. Menstrual acne is usually a flare-up of chronic acne lesions which return to a dormant state in the intermenstruum. Since the hemorrhagic tendency is increased during menstruation, it is not surprising that menstrual purpura of all degrees of severity occurs.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### FOR EARLIER DIAGNOSIS OF CANCER

ACCORDING to the statisticians, one of every six of us who has lived, or will live, beyond the age of fifty will die of cancer. That is an appalling thought. Without thinking of the cancer death rate

in figures, all medical men have long been convinced of the urgency of the need to do all in our power, individually and collectively, to reduce this death rate.

One of the latest to write on this subject is Hall<sup>1</sup>, of Arizona. "We all know," this surgeon tells us, "that in every malignant growth there is a stage where it is curable."

Now, I am sure that more than a few us seriously question that there is a stage in every malignant growth at which it is curable by any means known to anyone. This in no way negatives the statement that the only hope of a cure in cancer lies in early diagnosis and adequate treatment; it only suggests that there is good reason to believe that some cancers are incurable from a period antedating any possibility of their discovery.

Other points well emphasized in this article of which it is in order that we be reminded often are:

A medical doctor accepting a patient who has symptoms that could be due to cancer assumes an extremely grave and responsible duty. Before he assures the patient that he does not have a malignant condition he must satisfy himself that he has used every available means to make certain beyond the shadow of a reasonable doubt. This may involve a great amount of time, energy, tenacity of purpose and patience because superficial examinations have no place in suspected cancer. Furthermore, physicians and surgeons must always be on the lookout for neoplasms. Two exceedingly important points made toward the conclusion are:

One must remember that a patient may develop or be afflicted with cancer while attending a doctor and undergoing treatment for some other disease condition.

We must be ever cognizant of the fact that while there is more or less a cancer age, cancer occurs at all ages, and even young people at times have cancer.

Because of the fact that in many persons symptoms of gastric carcinoma are not felt early in the disease, and because the physician, when first consulted about gastric complaints, does not always consider cancer as a possible cause, St. John *et al.*<sup>2</sup> made mass röntgenographic studies of men and women not suspected of having gastric lesions.

The procedure was a rapid fluoroscopic examination of the stomach (with patient in the erect position): as many as 40 patients an hour. If nothing abnormal was found, the patient was dismissed; if there was any suggestion of disease, the patient returned for a more careful study.

The subjects were 2,413 persons 50 years of age or more, who had no digestive symptoms; 491 of

these persons were reexamined a year or more later. Three were found to have unsuspected malignant gastric tumors (1.24 per thousand). Resection was done in two of these three cases, and since the tumors were small and had not metastasized the prognosis is believed to be good.

In the other case, *the lesion was so early as to be unidentifiable at operation*; resection was, therefore, delayed until a few months later, when an obvious tumor developed at the site of the lesion previously observed fluoroscopically; *the patient later died of the disease.*

### POLIOMYELITIS

THE DIAGNOSIS of poliomyelitis may be very simple, or it may be extremely difficult, in fact impossible without the aid of unusual laboratory assistance. It is usually easy in times of epidemics, and difficulty in off-seasons, but even during an epidemic there is a risk of a false diagnosis because of too ready acceptance of neurologic symptoms or of pseudoparalysis as being due to poliomyelitis.

This wise reminder is given by Hill, in an article<sup>1</sup> from which further abstractions are made.

In addition to diagnosable forms there are many reasons for believing that poliomyelitis occurs during an epidemic in an undiagnosable form in a much larger group of persons, usually diagnosed as sore throat or influenza, since signs of central nervous system involvement do not develop and no changes occur in the spinal fluid.

The number of cases which can be traced to direct contact with a known case is not great. As a rule the onset is acute, with fever, headache, malaise and perhaps nausea and vomiting, an onset which differs little from that of many other acute infections. Fever aver. 101 to 103. Sore throat was complained of and/or found in 95 of 136 cases.

The most important and constant of the early diagnostic findings is stiffness of the muscles of the neck and back. The patient, asked to sit up, turns himself to the side, pushing himself up with his arms and maintaining the sitting position by propping himself with his arms extended backward. This, developing in a patient with a febrile illness, justifies a presumptive diagnosis of poliomyelitis. Kernig's sign is less constant. Reflexes are frequently hyperactive in the early stages, may be diminished or absent later. In the nonparalytic or abortive case there is usually no pain. In the paralytic cases pain may be severe along involved nerve trunks and muscles. For the most part patients are alert in contrast to the stupor and coma of purulent and tuberculous meningitis.

The spinal fluid is clear and may be under slightly or moderately increased pressure. In five of 136 proved cases the count was in normal limits—in

1. L. E. Hill, Des Moines, in *Ill. State Med. Soc.*, Aug.

1. N. D. Hall, M.D., Phoenix, in *Ariz. Med.*, July.  
2. St. John, F. B., Swenson, P. C., and Harvey, H. D.: An experiment in the early diagnosis of gastric carcinoma. *Ann. Surg.*, 119:225, 1944.

62, 11-100; in 50; 100-500. There were eight cases in which it was over 500, the highest 1,150. Early in the disease pmns. may predominate—true of 27 of our patients. Later there is a lymphocytic predominance.

In cases with paralyses, these usually appear by the third or fourth day after the onset of symptoms. Inability to swallow, regurgitation of liquids through the nose, and a nasal twang to speech are symptoms highly suspicious of the bulbar paralysis form of poliomyelitis. Examination of the throat usually reveals palatal paralysis and a pharynx filled with saliva.

Standefer<sup>2</sup> gives the findings on analysis of 136 cases of acute anterior poliomyelitis at a Hospital for Children in Des Moines, during 1946:

The greatest number admitted in late summer and early fall. Majority of patients under eight years.

No correlation between severity of disease and spinal fluid findings.

The majority ran a low-grade or moderate fever, of average duration of 7.6 days.

Duration of symptoms before admission 3.7 days; 67.5% were hospitalized 28 days or less.

Thirty-three per cent were nonparalytic. Of the paralytic patients, 37% recovered without paralysis; 36% had mild residual paralysis and are likely to show some improvement; 14% had paralysis of one limb that will probably require braces or future surgery; 13% had a severe paralysis involving more than one limb; and 3% of the total group died.

2. J. M. Standefer, Des Moines, in *Ill. J. State Med. Soc.*, Aug.

## ORTHOPEDIC SURGERY

JAMES H. CHERRY, M.D., *Editor*, Asheville

### GANGLION

CARP AND STOUT have defined ganglion as a "cystic swelling usually occurring in close proximity to joints and tendon sheaths, and containing a thick, mucinous fluid." The common name for this condition is wen, and the therapy administered in ancient times was applied by means of the family bible, or some other heavy tome, capable of surgical traumatization. However, due to the fact that recurrences were frequent, and that the condition gave rise both to associated pain and interference with function and unpleasant cosmetic results, the attention of the medical profession was focused upon this phenomenon within modern years.

The underlying cause of ganglion is still uncertain. From the embryologic standpoint, it seems that these cysts develop from a maldevelopment of connective tissue surrounding the joints and the tendons, which give rise to a pseudo-endothelial-

ized space, similar to the synovial lining of joints. Some medical writers have thought that these cysts were simple herniations of the synovial membranes of the involved joints and tendon sheaths. The role of specific trauma in the background occurs in only one-fifth of the reported cases, and therefore cannot be classified as the principal etiologic agent.

The question often arises in compensation cases as to whether an injury received at work might give rise to such a condition. The author believes that in certain cases where a specific blow or contusion results in localized hemorrhage and swelling about a joint or tendon it is entirely possible that a ganglion may result. In the majority of cases, however, one should be quite skeptical as to the connection between a man's work and this condition, since the appearance of these cysts is usually insidious without the history of direct trauma.

Generally, it has been the practice of most surgeons and practitioners to excise these growths under local anesthesia without the use of a tourniquet and proper operating room conditions. In an extensive review and study of this condition by Ghormley and the author,<sup>1</sup> it was found that 31 per cent of these ganglia which had been excised recurred—50 to 60 per cent recurred when they were done under local anesthesia. The best results were obtained when the patient was placed under general anesthesia and a tourniquet applied to the involved extremity to allow detailed dissection without interference from hemorrhage or edema from novocaine infiltration. The author has followed this routine in the majority of his cases since that time, usually employing sodium pentothal intravenously as an anesthetic agent, and making every effort to excise the cyst in toto without rupturing the membrane. Following the operation, if the cyst had been approximated to a joint, and especially if the base of the cyst had been found to be connected with the joint capsule, the application of a plaster splint or some other type of immobilization of the joint was carried out for ten to twelve days. From the observation of these surgical principles, the best results have been obtained.

1. Cherry, J. H., and Ghormley, R. K.: Bursa and Ganglion. *American Journal of Surgery*, May, 1941, 319-330.

## RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M.D., *Editor*, Charleston, S. C.

### NITROUS OXIDE-OXYGEN-ETHER FOR TONSILLECTOMY IN CHILDREN

EVEN though not quite all tonsils are being removed now, as was the case 40 and 30 years ago, enough tonsillectomies are being done now to make all doctors desirous that the operation be done with least risk and best prospect of success.

Evans<sup>1</sup> writes on the choice of anesthetic.

As an anesthetic to children for tonsil and adenoid operations the combination of nitrous oxide-oxygen-ether has the following advantages: 1) Children can usually be put to sleep with nitrous oxide-oxygen without resistance or a stage of excitement, as it is not unpleasant to inhale. 2) The addition of ether helps in maintaining a quiet throat. 3) Nitrous oxide given throughout the operation reduces the amount of ether needed and the child regains consciousness more quickly than when ether alone is used.

The apparatus should be so constructed as to deliver a large volume of the gases and should be equipped with an ether chamber and an emergency oxygen by-pass. The McKesson apparatus meets these requirements.

After the child is placed on the operating table, a large volume of 95% nitrous oxide and 5% oxygen is turned on, the patient holding the nasal inhalor with both hands, which are guided by the anesthetist. The nasal inhalor is manipulated so that it is in close proximity; but not touching the patient's face. Then start counting and the child is usually asleep before "50." Then the oxygen is increased to 10% and the nasal inhalor placed tightly over the nose and fastened to the head harness. Ether from the gas-oxygen apparatus is gradually added to the gases until it is given in full strength. The surgeon after looking for loose teeth\*, inserts the mouth-gag; the stopcock is opened and the mouth hook placed in the left corner of the mouth. If the anesthesia is not of sufficient depth, additional ether vapor is conducted into the mouth through the small mouth-hook connected with the ether chamber on the electric suction apparatus. If this is not available, the flow of gases is temporarily reduced and drop ether given for two or three minutes through gauze packed into the open mouth. There should always be overhead light so that changes in the child's color can be distinguished. Enough oxygen should always be given to prevent cyanosis.

The anesthesia should be deep enough to abolish the pharyngeal reflexes; but not the cough reflex. During the operation cough is a warning that some foreign matter has started down toward the trachea, and must be removed instantly.

If an emergency arises, such as deep cyanosis or suspension of respiration, the surgeon quickly removes all instruments including the mouth gag. The mouth-hook is also removed and the stop-cock turned to shut off the flow of gases in this direction.

The expiratory valve is screwed down (if it is open) so that there will be a closed circuit when

1. J. H. Evans, Buffalo, in *Cur. Researches in Anes. & Analg.*, May-June.

\*It would be wise to attend to this detail at the beginning of the Chapter.—Editor.

the nasal inhalor is closely applied, and oxygen under pressure is forced into the lungs, care being taken that the stomach is not also inflated. To prevent this the surgeon should place a hand over the child's stomach and press down.

Usually one inflation of the lungs is all that is necessary; but one should be sure that the oxygen reaches the lungs. If in doubt, administration of oxygen under pressure should be repeated. It is better, although not necessary, to turn off the ether during the procedure.

Nitrous oxide-oxygen is a dangerous anesthetic in the hands of a novice, especially to children under six because they can go into asphyxial stage quickly and one may mistake the cry or muscular movements of this stage as indicating too-light anesthesia, and give more nitrous oxide instead of oxygen. The child will soon stop breathing and unless oxygen is promptly forced into the lungs a fatality may result.

Those who lack training in the use of nitrous oxide-oxygen may make induction pleasant by the use of vinethene, ethyl chloride; or even ether if it is given slowly.

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## SURGERY

WILLIAM H. PRIGOLEAU, M.D., *Editor*, Charleston, S. C.

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### WOUND CLOSURE

WOUND CLOSURE should be carried out as soon after injury as possible with due regard to preventing infection. Gross contamination, tissue trauma and lapse of time generally necessitate some delay so as to prevent or control infection. The most desirable closure is that of full-thickness skin and superficial fascia. Grafting is at best a compromise, and is to be resorted to only when a full thickness closure cannot be effected. A grafted surface is particularly undesirable should subsequent nerve, tendon, or bone surgery be necessary in the same field. In such cases it may be necessary to first excise the graft and effect a full thickness closure before proceeding with definitive surgery.

In a recent article in the *Annals of Surgery*, OTTO<sup>2</sup> describes methods of obtaining a full-thickness closure. Radical undermining and interpolation are used singly or in combination. In undermining, the plane for mobilization is beneath the subcutaneous fascia and fat. If carried out by divulsion with scissors the blood supply is interfered with least. The use of marginal flaps is often most effective. Where, after undermining, tension is too great across any given diameter, flaps can be cut and rotated across the wound. The Z plasty of the late Doctor Staige Davis is an excellent example of this procedure.

By applying the above principles the best functional and cosmetic results are obtained.

1. OTTO, T. O.: Wound Closure Without the Use of Grafts. *Annals of Surgery*, 125:778, June, 1947.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### INHALATION THERAPY IN CHRONIC BRONCHIAL INFECTIONS

CHRONIC BRONCHIAL INFECTIONS are notoriously resistant to treatment. Levine<sup>1</sup> writes convincingly on the reasons for this resistance and the value of inhalation treatment. The bronchial walls are thickened and fibrosed with marked decrease in the blood supply. The involved bronchi are constantly filled with purulent secretion, and there is some obstruction to drainage. These bronchi are more irritable and much more liable to spasm than are normal or even acutely inflamed bronchi.

There is a decrease in ventilatory activity in the region of the bronchial infection. Thus, regardless of the blood level obtained with the use of any agent, little of the agent reaches the infected area; when it does, the little that does has difficulty in penetrating the barriers that the body itself has thrown about the infected area. The very absence of fever and toxic symptoms during the chronic phase of this disease is indication that little exchange of any sort goes on between the infected areas and the blood stream. Inhalation of a therapeutic agent would appear to be more valuable than the application of that same agent by any other means.

Treatment was started using 1,000 U. of penicillin per c.c. The patients were instructed to nebulize 1 c.c. of this solution every three hours over a period of three to four weeks. Eighteen patients were thus treated with what is now considered a very low concentration of penicillin. In this group of 18, 10 patients showed complete clearing of cough and expectoration and the abolition of all symptoms. Four patients showed very marked improvement, but continued to cough in the a. m. One patient improved but still had symptoms, and three showed no improvement.

Some patients who showed such marked relief showed no change in their bronchographic picture, and a great many of them had a recurrence of symptoms following the next upper respiratory infection. Bacteriological studies indicated that the organisms found at the time of the recurrence were not the same organisms that were present before treatment, indicating a new infection which had taken place in the already pathologic bronchial tree. With recurrences these patients were treated, using penicillin from 5,000 U. per c.c. to 20,000

U. per c.c. During this period the dosage was increased on all of the new patients who were studied, and all of these patients were started on increased concentration, 10,000 U. per c.c. at first and 20,000 U. per c.c. in some of the cases.

This high incidence of recurrence of symptoms which was actually a new infection, or a reinfection in a diseased area, is a typical clinical finding in bronchiectasis.

In this group of cases chemotherapy had been tried by many orthodox methods. In the cases in which no improvement was noted the organisms in all cases were gram-negative bacteria and other bacteria on which penicillin has little effect.

Recurrence of symptoms may be frequently prevented by the use of medication and postural drainage. When these symptoms become more troublesome, another course of inhalation therapy is indicated.

Requisites for inclusion in this experimental group were:

Definite bronchographic evidence of bronchiectasis, a history of this type of infection over a long period, and previous treatment by bed rest, postural drainage, sulfonamides by mouth and penicillin by injection.

Forty-two patients were treated over a period of two years; of these, 19 had complete disappearance of symptoms; 14 marked improvement in symptoms and general condition; eight no improvement.

The concentration of penicillin per c.c. in the nebulized solution did not appear to be an important factor.

### THE TREATMENT OF INEVITABLE INCOMPLETE, AND SEPTIC ABORTION

ABORTION is responsible for a greater wastage of citizens than any disease. In the series here reported<sup>1</sup> an abortion was considered inevitable when bleeding was associated with uterine contractions and dilatation of the internal osium. An incomplete abortion was diagnosed when bleeding persisted following the abortion and examination revealed a bulky uterus, usually with a patulous cervical canal, or when inspection of the material passed indicated that placental tissue had been retained. An abortion was considered septic in case of fever for which no other cause was found, offensive or purulent discharge, or evidence of pelvic inflammation.

Believing that the principles of wound treatment accepted in general surgery should be applied to the treatment of abortion, interventionist treatment was instituted for all cases of inevitable and incomplete abortion. Impressed by the early results, we have continued this treatment for eight

1. J. McD. Corston & John Stallworthy, Oxford, in *Brit. Med. J.*, July 19th.

1. E. R. Levine, Chicago, in *Dis. of the Chest*, July-Aug.

years and now present a brief analysis of the work done.

The series consists of 600 consecutive cases treated surgically by us and by flying-squad teams for which we were responsible. This series does not include 58 cases of threatened abortion, spontaneous complete abortion, and missed abortion. There were no deaths in this group. Five hundred patients were treated in the general wards and 100 in private beds. Forty-two patients were frankly septic on admission and two of these were suffering from a generalized *Clostridium welchii* infection. Many were admitted in a critical condition as a result of extreme blood losses. When the occasion demanded, resuscitative measures were adopted in the casualty admitting-room, from which the patient was taken direct to the theatre.

On 71 occasions blood transfusion was administered, and this was always started before taking the patient to the theatre and was usually continued during the operation. In this way the exsanguinated patient was better prepared for operation, the risk of early transfusion reactions being masked by anaesthesia was reduced, and in the unlikely event of further extensive blood loss in the theatre there was a minimum of delay in replacing it.

Rh-immunization is now avoided by preliminary testing, or is reduced to a minimum in extremely urgent cases by the use of Rh-negative blood. When the patient was suffering from extreme blood loss or shock it was often necessary, because of venous spasm, to give the blood under pressure. When sepsis was present 2 g. of a sulphonamide was given as an initial dose, followed by 1 g. four-hourly. If hemorrhage was severe the patient was taken to the theater without further delay; if it was not severe operation was postponed for 12 to 24 hours so as to obtain a satisfactory blood concentration of sulphonamide drug.

Once the patient was considered fit for operation treatment was as follows. After shaving and washing of the vulva and catheterization, the patient was taken to the theatre, with the transfusion still running. In critical cases the anaesthetic was not started until the surgeon was gowned and ready to operate. Early in the series ether was used extensively, but this was replaced by hexobarbitone and then by thiopentone, as being less disturbing to the patient. Small doses, often only 0.25 g., were used.

After the vulva and vagina had been swabbed with flavine in spirit, 1 in 1,000 the surgeon gently examined the pelvis to determine the exact position of the uterus and the state of the cervix. Failure to make this preliminary examination can result in the soft wall of a pregnant retroverted uterus being perforated by sound dilators, or forceps. If the canal was patulous and placental tissue was

in reach it was gently removed with the gloved finger. If not, then the cervix was exposed and an oxytocic drug was injected under vision into the cleaned cervix. Early in the series 0.5 ml. of pituitrin was used, but this was later abandoned in favor of 0.5 mg. of ergometrine. The change was made because of the general pallor and occasional sweating following with the use of pituitrin and the rare but unnecessary fatalities when used in obstetrics.

The length of the uterine cavity was gently measured with a sound. Unless it was already patulous the cervical canal was carefully dilated to the size of a No. 14-16 Hegar dilator. Sponge forceps were then carefully introduced, opened, rotated through 90 degrees, closed and withdrawn—this repeated until no further pieces of placental tissue were removed in this way. The cavity was then gently and thoroughly explored with a blunt flushing curette through which passed a slow stream of dettol (2 dr. to 1 pint) at a t. of 110°. This removed small fragments of tissue missed by the forceps and also stimulated uterine contractions, as shown by the rapid decrease in the length of the uterine cavity and the cessation of any bleeding. The cavity was then packed with a sterile 2-in. (5 cm.) gauze roll, which was removed six hours later. In septic cases the pack was impregnated with 10 g. of sulphathiazole powder. This pack promotes uterine contractions and by direct pressure on the placental site it safeguards against further bleeding and with its removal it clears any small fragments or clot which if left could promote discharge, further hemorrhage, and possibly infection.

The patient was allowed up 36 to 48 hours later, and if the home conditions were satisfactory was discharged on the third or fourth day. An attempt was made to discover the cause of the abortion, and advice was given on the necessary care during the early weeks of a subsequent pregnancy. Iron was given to combat anemia secondary to the blood loss, and the patient was requested to report for a follow-up examination in a month.

There was one death in the series, the patient being one of the two whose abortion was complicated by a generalized *Cl. welchii* infection. The patient was moribund on admission. Abortion had occurred one month previously, on admission the hemoglobin level was 22 per cent. Because of the state of collapse and the general appearance of the patient a provisional diagnosis of gas-gangrene infection was made, and treatment was instituted with serum in addition to transfusion and chemotherapy pending the report of the bacteriologist on the high vaginal swab. Death occurred within 24 hours of admission, and necropsy confirmed the presence of *Cl. welchii* septicemia.

The average length of stay in hospital was 7.5 days for the 500 non-private patients.

This remarkable record accounts for the detailed, long abstraction. It is doubtful if as good results have been obtained anywhere, any time.

These two British doctors are to be commended, and emulated.

## PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

### A WATER-SOLUBLE PREPARATION FOR PROLONGING EFFECTIVE PENICILLIN LEVELS IN BODY FLUIDS

LOEWE and his coworkers report a great advance in penicillin therapy, which will interest us all.

We are writing to learn if this new preparation is available, and will pass the reply on as soon as possible.

A single daily dose of an injectible preparation of penicillin that maintains effective levels in body fluids, is stable, water-soluble, nontoxic and non-irritant, is highly desirable.

To meet these criteria, the following formula is offered:

Crystalline sodium salt of penicillin (300,000 Oxford units)	180.0 mg.
Ephedrine sulfate	25.0 "
Epinephrine dihydrochloride	1.0 "
Eucupine dihydrochloride	1.0 "
Gelatine-dextrose mixture (dried weight)	800.0 to 1,200.0 "

When sterilized, dehydrated, and bottled it is a homogeneous powder.

Steps in the administration:

1. Warm the bottle by immersion in hot water and by agitation
2. Expose the rubber diaphragm and sterilize with alcohol; inject 2 ml. of sterile distilled water
3. Reimmerse the bottle in warm water in a basin or under the tap
4. With an 18- or 19-gauge needle withdraw the solution into a 5- or 10-ml. sterile syringe
5. Substitute a 20-gauge needle and inject the gel subcutaneously or intramuscularly, first withdrawing the piston slightly to make sure that a vein has not been entered.

In 300 subjects the average blood penicillin levels were at peak during the initial eight to 13 hours (0.08 to 1.91 Oxford units per ml.) and then tapered off to a level (0.015 Oxford units per milliliter) which is still bacteriostatic for many organisms, including most strains of gonococci, pneumococci, hemolytic streptococci, and staphylococci. In no instance has the preparation proved toxic or caused local reactions.

Ever since penicillin became available for clinical use, attempts have been made to devise meth-

1. Leo Loewe et al., Brooklyn, in *Jl. Lab. & Clin. Med.*, July,

ods for administering this agent which would overcome its inordinately rapid loss through the kidneys. Recourse, for the most part, is still being made to fractional intramuscular injections or continuous venoclysis.

Even with two-hour intermittent, intramuscular injections, there is a fraction of the treatment period wherein there is little or no penicillin in the blood; 60 per cent is excreted in the urine, mostly within one hour after intramuscular injection of the aqueous solution.

After administration of penicillin emulsified in beeswax and peanut oil and in oil and water mixtures penicillin assays in body fluids showed adequate levels, but continued use has caused local reactions and lack of stability at room temperature has been reported.

A new penicillin preparation for prolonging effective levels in body fluids has been described. It is water-soluble, nontoxic, free of local reactions, and easy to administer. It maintains measurable levels in the blood for periods up to 24 hours or longer and has retained its stability at room temperature for more than a year.

*A note to Dr. Loewe brings information that this product is not generally available. Why can not your own druggist make it up?—Ed.*

### AS TO VACCINATION AND REVACCINATION

(*British Med. Jl.*, July 19th)

It is a well-known fact that, especially in the case of revaccination, much better results can be expected from the use of human lymph as compared with calf lymph. The use of human lymph has practically been abandoned because of the danger of transferring syphilis, erysipelas, and other infections. But nowadays syphilis can be easily excluded by serological examination, and penicillin and the sulphonamides have greatly diminished the danger of septic infections.

Revaccination every 10 to 12 months should be carried out in areas where smallpox is endemic. A fleeting papule 48 to 72 hours after vaccination with vaccine lymph merely indicates a previous contact with the antigen and may occur with dead virus. Thus it is probably only a "sensitivity" reaction and not an indication of immunity. It is considered safest to record "successful vaccination" only when a vesicle appears. It is interesting to note that vaccination by the multiple-pressure method has recently resulted in good takes in numerous individuals who had several unsuccessful vaccinations by the usual scratch method.

### HUMAN INTESTINAL PARASITES IN CHENG TU

(Kuo Chin Hsu, M. D., in *Chinese Medical Jl.* (Shanghai), Mar-April)

*Ascaris lumbricoides*.—The incidence among primary school children is 85.3%; among university freshmen 46.8%. The average number of eggs found in infested cases



among primary school children was 38.5 and among freshmen 20.8. In the servant group, the incidence was 68.7%, with a mean count of 11,745 eggs per c.c. of feces.

*Hookworm.*—The incidence among primary school children 0.4%, in the university freshmen 0.5%, in the servant group 17.3%—average egg count per c.c. of feces in the positive cases 2106. Two suffered from severe anemia and had 17,000 eggs in each c.c. of feces.

*Trichuris trichiura.*—The incidence varied from 2% among freshmen to 8.2% among primary school children, and 33.6% in the servant group.

*Endamoeba histolytica.*—The incidence in this series is only 1.7%.

*Endamoeba coli.*—The incidence among primary school children was 7.4%, 6.7% for freshmen, among servants 16.5%.

The percentage of individuals found harboring two or three species of parasites is by far the highest in the servant group.

In this series, we did not find any eggs of *Enterobius vermicularis*, since this worm lays its eggs outside the anus.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### MANAGEMENT OF BREECH PRESENTATION

THE CHOICE of method of dealing with presentations by the breech has shifted back and forth for decades. A conservative obstetrician's<sup>1</sup> article is abstracted.

Dieckmann states that "the best clinical test of a doctor's obstetric ability is his management and delivery of a breech presentation." Just what constitutes an uncomplicated breech delivery apparently is not yet decided. It would seem fair to say that a gross fetal mortality of 7.5 or 8 per cent, which may be corrected to 3.5 or 4 per cent, for term pregnancies is excellent.

For the mother also morbidity and mortality rates are higher, injury to the maternal soft parts is more extensive, and hemorrhage is more apt to occur.

These cases should be thoroughly studied before labor commences, utilizing every means at our disposal. Breech presentation is not an indication for abdominal delivery except in very rare instances. It should be considered in the elderly primipara, particularly if there is any cephalo-pelvic disproportion and if x-ray has ruled out gross deformity of the fetus.

In most of the larger institutions assistance is rendered only when it is found that the patient is unable to deliver herself. At the Boston Lying-in Hospital a preference is held for breech extraction under surgical anaesthesia as soon as complete cervical dilatation is reached. Tentorial tears, cerebral hemorrhage, intracranial damage and asphyxia are the most common causes of infant mortality, and cord injuries are not rare. Potter stated that

1. J. M. Whitfield, Richmond, Va., in *W. Va. Med. J.*, Aug.

the occasional operator will do best to allow the patient to deliver herself until the umbilicus is born and then give assistance which may be needed.

Episiotomy and application of forceps to the after-coming head are of the greatest value and often are life-saving. Episiotomy should be done in all cases unless the perineum is very greatly relaxed, and forceps should be applied to the after-coming head whenever any real difficulty in its delivery is encountered.

The performance of external cephalic version as a means of converting these cases to vertex presentations, has for many years been routinely practiced by the author, and he knows of no case in which an accident has occurred to either mother or baby from its employment. It appears that this simple maneuver never has become popular with physicians, probably because 1) the breech position is not recognized early enough, and 2) the procedure is not done often enough for the attainment of any degree of skill in its performance.

### ARSENICAL DERMATITIS SUCCESSFULLY TREATED WITH BAL

(J. L. Reeve, Director of Venereal Disease Clinic, Bournemouth, in *British Med. J.*, July 26th)

In the first case—primary syphilis, Wassermann-neg.—treatment was started at once with 300,000 units of penicillin, b.i.d., for five days, together with N. A. B. and bismuth. A total of 6.6 g. of arsenic was completed on August 17th. On August 28th an erythematous rash with desquamation appeared on the limbs and trunk. The patient was given daily intravenous injections of 6 ml. of calcium thiosulphate. There was no improvement on Sept. 4th; he had edema of the hands, fissuring of the palms with some exfoliation and similar fissures at the ankles and on the soles of the feet, oozing from all fissures. On Sept. 5th, treatment with 2 ml. of BAL (British anti-Lewisite) intramuscularly every four hours was started. The next three days he had 2 ml. twice a day, and then 2 ml. a day for two days. On Sept. 11th there was no desquamation and the fissures were drying up. On the 18th the edema of the hands was much less and the fissures were healing well. By Oct. 9th the hands and feet were quite healed and the patient was back at work.

The other case, that of a housewife, seven months pregnant. It was thought advisable to prescribe arsenic and bismuth as well as penicillin from Sept. 25th to Oct. 1st; three injections of 0.45 g. and five of 0.6 g. of N. A. B. (a total of 4.35 g. of arsenic). On Oct. 30th erythematous patches with edema were noticed on the buttocks, smaller patches at the elbows. Calcium thiosulphate, 6 ml., was prescribed twice weekly till Nov. 15th. As there was no improvement, BAL was given from Nov. 22nd to 25th. Owing to her confinement the patient did not attend again until Jan. 22, 1947, when no rash was to be seen, and she stated that it had quite disappeared before Dec. 17th.

It seems to me that BAL may well be the answer to the syphilologist's prayer, for, instead of cases of arsenical dermatitis being in hospital for weeks at a time, they may now be treated as out-patients. The response is dramatic, as the rash begins to clear as soon as treatment is started.

PENICILLIN.—A patient requires three to five times as much penicillin by mouth as was required to obtain the same level if the drug were given intramuscularly.

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## X-RAY SUGGESTIONS FOR THE GENERAL PRACTITIONER

ONE OF THE GREATEST of the faults of the specialist is that most of him assumes that the general practitioner is incompetent to do anything within the field of said specialist. By extension, the G. P. should do nothing but assorting and referring, for everything medical or surgical is covered by a specialty—many by two, three or more overlapping specialties.

A radiologist in the Northwest takes a different attitude. This Minnesota teacher and practitioner of this specialty regards it as rational and proper that much x-ray work be done by the non-specialist, and offers helpful instruction.<sup>1</sup>

The physical and chemical laws governing the exposure and processing of radiographs are not very complex, yet few physicians have taken the time to familiarize themselves with the fundamentals. Good film quality is the basis of good diagnostic roentgenology.

In consultation practice the greatest single film defect seen is underdevelopment, often coupled with over-exposure. The reason is simply that the films have not been left in the developer long enough, or that the solutions are too old or too cold. If the technician, often the doctor himself, would only realize that the most precise part of making a good radiograph is done in the dark room, and that the laws governing the development and fixation of an exposed film are infinitely more exact than the numerous variables used in the actual exposure, film quality would be greatly improved.

Developing solution is oxidized rapidly whether the solution is used or not. Tank covers with rubber gaskets around the edges should be used or other means of combatting oxidation tried, such as the use of floating covers or floating sheets of wax paper laid on the solution. The level of the solutions should be maintained by commercially available replenishers.

A simple test of full or adequate development of a film can be made by inserting a finger between the finished film and the viewing light in an area on the film not covered by the patient, such as the region just above the shoulder in a chest film which ordinarily is black. If the development is adequate, the finger outline should be invisible, or only poorly seen. The test for exhaustion of a developing solution is lack of blackening in the peripheral areas, assuming that the exposure has been reasonably well conducted. Correction factors for time to compensate for exhaustion by use are available, and if the time exceeds seven minutes at the recommended normal t., it is wise to discard

1. L. A. Nash, St. Paul, in *Il-Lancet*, Aug.

the developer. The supplier can give information about exhaustion by age alone, this may be two or three months.

Since the developer is alkaline and the fixer is acid, it is obvious that there should be adequate rinsing between the two solutions. Fixation should be about as long again as the time required to "clear"; that is, twice as long as the time needed for the unreduced silver to separate from the film. When it takes four times as long for a film to "clear" as it did when the "hypo" was fresh, then the solution should be replaced. The final washing is important, also, and the length of time recommended by the manufacturer of films and chemicals—15 to 30 minutes, depending on various factors—should be followed implicitly.

An accurate *t. control* is necessary. At ordinary *ts*, a chemical reaction will take only half as long, if the *t.* is raised 10°, and twice as long if a corresponding drop occurs. One rarely gets into difficulty with overdevelopment, and it is far better to repeat the examination than to depend on overexposed and underdeveloped films.

Other dark room errors include light fog, loss of detail due to "flowing" of the emulsion in hot solutions, "reticulation" of the emulsion, "contact" defects where two films are adherent during the processing, and a host of others.

After an installation has been made and has functioned for some time, it may be noticed that "something is wrong with the films." While investigation usually shows the source of trouble to be in the dark room, the machine or technical chart is blamed in most instances.

One should not assume a defeatist attitude as to the possibilities of a small machine. We repeatedly see work done in the home with bedside equipment by a good technician which equals the film quality seen with the larger machines. In buying equipment it should be remembered that break-downs are inevitable and that the availability of repair service should be considered in the choice of a machine.

The tube rating chart which is supplied with each tube should be posted conspicuously in the x-ray room and freely consulted. If a tube is used for fluoroscopy, the rating chart should be consulted since there are great variations in heat capacity of tubes, and fluoroscopy taxes a tube much more than routine radiography.

Film defects arising from faulty screens and cassettes rank second to dark room errors seen generally. These vary from gross acquired imperfections, such as marks produced by chemicals and poor contact, to simple dust and dirt in the cassette. Dirt can be removed by brushing or by washing with bland soap and allowing them to dry for several hours with the covers left open. Periodic in-

spections of screens should be made. Corrections and replacements should be made by reliable dealers. "Bargain" screens and cassettes should be avoided since it is very difficult to detect flaws by inspection alone.

A cone limits the size of the field examined and diminishes "secondary radiation." We often see gallbladder films where a cone properly used could have changed an indeterminate diagnosis into a definite one.

Small fracture lines, small gallstones can be lost in the haze produced by even slight motion. Sandbags should be used freely about the extremities, can be home-made. Immobilization belts should be used in the examination of the abdomen, the spine, the skull and in urography. Accurate measurement of the part examined is necessary.

Numerous "gadgets" are available. One should use the simpler, inexpensive devices such as sawdust bags or large corks for props, bolsters or pillows for the comfort of the patient, rulers and pointers for calculating angles and distances, and similar fundamental radiographic tools, instead of special accessories used only rarely.

An accessory which deserves special mention is the "Reed X-ray Technic Computer." Its use will lead to better films and can be obtained through most dealers in x-ray supplies.

By the use of screens in cassettes, exposure times have been decreased advantageously; reverting to the technic where the film is exposed in a cardboard folder, increased detail and information not obtainable by the other method is to be had. This is particularly true in the examination of extremities measuring less than 10 to 12 cm. in thickness.

The first examination of an injured extremity should be such that all of the involved bone or portion of the extremity is visualized. A case presenting good clinical evidence of a fracture, in spite of negative x-ray findings, should always be re-examined in a week, if symptoms persist, in order to demonstrate so-called "occult" fractures. These present themselves only after a time interval by a reactive zone of rarefaction, or periosteal new bone, or hemorrhage.

A proper examination of the spine challenges the skill of the radiographer. Exposures have to be long in the lateral views and may tax the equipment unduly if improperly made. The finest possible focal spot should be selected, yet the milli-ampere-second values needed with the high kilovoltage values and long target film distance required may exceed the tube capacity limit. By the use of careful immobilization and cones and interpolation of technical factors, satisfactory films are possible with even the smaller machines. If a machine is calibrated to operate at, let us say, 30 milli-

amperes on the "small spot," some patients will require exposure times and kilovoltage settings far in excess of the safe limits. By reducing the milli-ampere value and increasing the time, the tube will be subjected to no risk, and if the patient is comfortably and adequately immobilized, the added time will be of no great significance as far as possible motion is concerned.

Speed of exposure is important in chest examinations. With the smaller units, exposure times can be cut down by diminishing the distance.

Note that Dr. Nash does not represent the making of a good x-ray picture to be a matter of great complexity, beyond the possibility of accomplishment by anyone not devoting all his time and talent to x-ray work; that he speaks respectfully of the possibilities of the small, portable machine; and that he recommends, even in this day, when everybody is rich as river mud and getting richer by the hour, the use of "simpler," "inexpensive," even "home-made" devices!

The man must, certainly, have sprung from the loins of North Carolina's Revolutionary Nashes. May his tribe increase.

### PHOTOGRAPHS AS MEDICAL RECORDS

TWENTY YEARS ago, we urged upon a dentist friend that he take good pictures of the dental apparatus of all his patients, against the days when a number of them could be confidently expected to have their physiognomies greatly distorted in automobile wrecks. We urged that this would be an inestimable service to the patients, for so would be preserved such models for the guidance of the dental restorer, as could not be had in any other way; also a good piece of ethical business, which would bring many back from far places for the making of best restorations.

Until Stern's<sup>1</sup> article came in no thought of the wisdom of applying the same technique to the problems of surgeons other than dental, and of physicians, had occurred to us.

Once suggested, the application becomes obvious.

A single good picture is worth many words of description. Since this is true, it is amazing how few physicians, or even large institutions, photograph their patients. The original outlay is not great and after that it is negligible. Anything larger than 5 x 7 is a luxury.

The chemicals used in preparing the processing solutions are inexpensive, and prepared developer powders (requiring only water to make a solution) may be purchased for as little as 5c a tube, each tube making eight to 16 ounces of solution for tray development. By greater dilution most of

these can be used in tanks also. Hypo (sodium thiosulphate) sells for 10c a pound. Twenty-five cents will purchase 24 sheets of 2 x 3 paper for prints and \$1.00 will buy 12 8 x 10's.

A little care in arranging the material and focusing the camera, a bit of thought regarding the exposure, and if one does not forget to pull the dark slide, the picture will be good. In processing, watch the time and temperature chart and keep things clean, and the procedure reduces itself to soaking the film in the developer, then in water or stop-bath, and then in hypo. After washing and drying, the negatives are finished. Prints are made in a similar manner.

It is well-nigh impossible to overestimate the value of clinical photographs to the individual and to the science of medicine. Years after a tissue has returned to the dust a photograph still shows it in all its original freshness. Details which the human eye miss are faithfully recorded by the all-seeing lens. With the advent of natural color photography, even the various colorations of different lesions may be preserved.

Especially in the fields of orthopedics, maxillo-facial surgery, and ophthalmology, serial photographs are of inestimable value as progress records. Different phases of the slow processes of nature may be viewed simultaneously, and often physician is surprised by the differences. Many a plastic surgeon has been well and (legitimately) advertised by the simple expedient of presenting his patient with two photos, one made before the treatment, and the other, afterwards.

With a file of negatives made during the year, or during the work, it is a simple matter to provide many good lantern slides to illustrate the speeches, and to obtain good enlargements to enhance the interest in, and usefulness of, the exhibits. Here again we have need of the serial pictures to illustrate new operative techniques, and case progression. Good before and after pictures tell the visiting doctor more than hours of lectures could do.

Dr. Stern concludes handsomely: An age-old maxim that has put rational medicine in its present high place is "take nothing for granted"; the sister maxim to this should be, "if you can see it, photograph it!"

### GENERAL CULTURE AMONG MEDICAL MEN LOW IN BRITAIN ALSO

D. L. KERR, in Correspondence Dept., *British Med. J.*, July 12th

Sir:

Of Dr. Baron's basic premise (June 21, p. 902)—to-wit, that the standard of culture among medical students (and doctors) is distressingly low—there can be no criticism. Culture is an attitude

1. H. S. Stern, Little Rock, in *Jl. Ark. Med. Soc.*, July.

of mind. The cultured man is one who, as the result of many influences on his mental development, has learnt an instinctive habit of distinguishing the good, the true and the beautiful, from the bad, the false and the ugly.

Has Dr. Baron asked himself why, with so little interest displayed by the university authorities, a number of students (including, we presume, Dr. Baron) managed to achieve such an outlook on life as he himself deems desirable? By the time the age of medical studentship is reached the seed is already sown. The opportunities for intellectual advancement are available for those who have the interest to seek them out, and if the demand were greater the university concerned would be forced to provide greater facilities. At the moment these are inadequate only in the sense that one feels a larger number of students should be making use of them.

Let Dr. Baron realize that the foundations of a cultured mind are laid much earlier than the time of the anatomy course. Let him recognize that the ability to discourse on existentialism is no more the mark of a cultured intellect, than is the accurate knowledge of the course and relations of the greater superficial petrosal nerve the *sine qua non* of a practitioner. His plea should be for better schools and broader education; brighter architecture and more opportunities for the mass of the people to spend their leisure time in more beautiful buildings pursuing more intellectual hobbies than are normally found in the picture-house or public-house.

We medicos are not a race apart. We are admittedly an uncouth lot; but, like Garson Kanin's millionaire junkman, we are more "couth" than the next man—on the average. "The great happiness of life is to be neither better nor worse than the general run of those you meet with."<sup>1</sup> Dr. Baron wisely seeks to raise us all to his own high level, but does he consort only with doctors? And then to seek success by compulsion he will have us all crying with Falstaff:

"Zounds, an I were at the strappado or all the racks in the world, I would not on compulsion."<sup>2</sup>

#### References

1. Hazlitt, W. (1821). "On the Disadvantages of Intellectual Superiority." *Table Talk*.
2. Shakespeare, W. (1597). *King Henry IV*, Part I, Act ii, Scene 4.

But extracts from an Obituary in the same Journal show that this was not always so, and that it is not universally so now:

His interest in his subject was influenced greatly by his early training in classics and biology, by his passion for truth and logic and by his abundant scholarship. In aesthetics he was relatively insensitive to the visual arts, but vividly sensitive to the forms and function of words. There is little

To P. 282

## NEWS

### POST-GRADUATE COURSE IN CARDIOLOGY

Medical College of Virginia

September 8th-20th members of the teaching staff of the Medical College of Virginia will give a comprehensive course covering present knowledge of Cardiology.

The tuition fee is \$50.00.

Letters are being sent out by the college carrying the Preliminary Program and the following form:

Box 94

Medical College of Virginia

Richmond 19, Virginia

I wish to enroll in the Post-graduate Course in Cardiology to be held in Richmond, Virginia, September 8th-20th, 1947.

Check one:

1. My check for \$10.00 is enclosed.

2. By check for \$50.00 is enclosed.

(Checks should be made payable to The Medical College of Virginia.)

Dr. Thomas Albert Henson and Miss Martha Elizabeth Hipp, both of Greensboro, were married on August 2nd.

Dr. Algernon S. Vaiden, of Monterey, Va., died of a heart attack at his home August 1st. Dr. Vaiden was graduated from the Medical Department of the University in 1911, and spent most of his subsequent life in practice in Highland County.

DR. RICHARD MUDD VISITS HIS GRANDFATHER'S PRISON

On June 11th, Dr. Richard D. Mudd left Key West, Fla., on a government launch for Fort Jefferson.

Eighty-three years ago the grandfather of the present doctor, Dr. Samuel A. Mudd, of Maryland, was sent as a prisoner to the brick fortress with its shark-filled moat on Dry Tortugas, an island group 60 miles west of Key West.

Dr. Samuel Mudd's only crime was having, without knowledge of how the fracture was sustained, set the fractured leg of John Wilkes Booth, a few hours after Booth shot President Abraham Lincoln. Innocent of a crime and later pardoned by President Johnson, Dr. Mudd became the famed "Prisoner of Shark Island" and hero of a yellow fever outbreak.

The grandson, a resident of Saginaw, Mich., and his three children, while in Key West, were guests of the city, the National Park Service, and civic groups.

FORMER MEDICAL COLLEGE OF VIRGINIA HOSPITAL DIRECTOR  
RESIGNS NEW ORLEANS POSITION

Dr. Lewis E. Jarrett, director of the Medical College of Virginia Hospital from 1933 to 1944, has resigned his more recent position as director of Touro Infirmary, New Orleans.

Born in Lexington in 1901, Dr. Jarrett was educated at Washington and Lee University, was graduated in pharmacy from the Medical College in 1922 and in medicine from the institution in 1932.

Dr. Jarrett's executive career at the Medical College Hospital began in 1924 with his appointment as assistant superintendent. He also taught pharmacy at this college. In 1933 he became director, a position he held until 1944 when he resigned to go to Touro Infirmary.

## JOHNSTON-WILLIS HOSPITAL TO BE ENLARGED

The hospital established in Richmond by Dr. Geo. Ben Johnston and Dr. Murat Willis nearly 40 years ago, and a number of times enlarged in that time, is to have a new addition of 85 beds, it has been announced by Dr. Frank S. Johns, now president of the corporation and chief surgeon of the hospital.

The addition will take in the present nurses' home, Darlington Hall, a four-story structure north of the main building. The Robert E. Lee apartment, on Kensington Avenue adjacent to the hospital property, recently was purchased by the corporation and will become the new nurses' home.

Included in the new hospital unit will be an operating pavilion, obstetrical department and private rooms. It is expected that the new unit will be ready for use by September 1st.

Founded in 1909, Johnston-Willis Hospital first was located at Sixth and Franklin Streets in the building now occupied by the Richmond Builders Exchange. In 1924 it moved to its present location at Kensington and Colonial Avenues.

## EYE BANK AT NEW ORLEANS

An affiliated Eye Bank has been organized in New Orleans, with the cooperation of the Louisiana State University Medical School and the Tulane University Medical School and Hospital. It has been announced at headquarters of the Eye Bank for Sight Restoration, 210 East 64th Street, New York. Other affiliated Eye Banks are functioning in Boston and Chicago.

The new Eye Bank is located in the Hutchinson Memorial Building, New Orleans. Mrs. Orville Ewing is serving as Executive Director.

The Eye Bank for Sight Restoration, Inc., in New York and its three affiliated Eye Banks collect and preserve healthy corneal tissue from human eyes for transplanting to blind persons who have lost their sight because of corneal defects, and this tissue is available to surgeons who are qualified to perform the corneal transplant operation. Two other objectives are the training of surgeons in the technique of the operation, and the furtherance of research studies.

## MORE THAN TWO-THIRDS OF MEDICAL SCHOOL FRESHMEN ARE WAR VETS

The American Medical Association announces that 70 per cent of the 6,252 students who have been selected as freshmen to enter medical schools and schools of medical basic sciences in the United States in 1947 are war veterans.

The freshmen students selected up to June, 1947, include 4,399 male veterans (70 per cent), 1,301 other men (21 per cent) and 598 women (9 per cent). Forty-seven of the women are veterans.

In the period July 1st, 1937, to June 30th, 1942, when 35,818 physicians were graduated, 18,988 physicians were reported to have died. Thus the net increase in the number of physicians for that five-year period was 6,920. During the five-year period July 1st, 1942, to June 30th, 1947, 33,877 physicians were graduated and 16,453 died, making a net increase of 16,442.

## CULTURE—From P. 281

wonder that his lectures were unforgettable. They were precise, sincere and eloquent, with the right and unusual word always coming to his aid. He saw his pathology as part of man's whole struggle with his environment. He could argue things with fervour but would cease from arguing at the first sight of fixed prejudice or blind ignorance.

## MEMORIAL TO DR. HARPER

Plans for establishment of a "Bo Harper Memorial Fund" in tribute to the late Dr. F. T. "Bo" Harper—medical director of the Alamance County Tuberculosis Sanatorium and one of this community's leading physicians, who died July 4th in a local plane crash, have been announced following a meeting of the Burlington (N. C.) Presidents Club, which is comprised of the head of every civic organization.

The fund would be used to perpetuate work in tuberculosis control in Alamance County, and every citizen will be invited or solicited to contribute to the cause. The drive gets under way immediately.

Civic club representatives, members of the Alamance Medical Society and officials of the Alamance County Tuberculosis Association will decide further details for solicitation and administration of the fund at a meeting to be held at the Chamber of Commerce office on Monday.

## APPOINTMENT SOON OF SISTERS TO SUPERVISE NEW HIGH POINT HOSPITAL

Appointment of Catholic Sisters to supervise the \$1,000,000 hospital proposed for High Point is expected to be made within the next few months, according to an announcement in July by Bishop Vincent Waters, of Raleigh.

Several weeks ago the English order, Little Servants of the Mother of God, announced they had selected High Point as the site for their hospital.

Bishop Waters pointed out that construction would not get under way right away, but that representatives of the order probably would be in America to start on the work within the next six months.

## CAMARRU'S COUNTY HOSPITAL CELEBRATES

On Saturday, July 26th, the County of Cabarrus celebrated the tenth anniversary of its hospital.

Opened July 26th, 1937, with accommodations for 50 patients, which were outgrown in six months, the hospital had an addition of a new wing in 1940, increasing its capacity to 135 beds and 40 bassinets.

To the Board of Trustees at their annual meeting early this year, Chairman C. A. Cannon announced the need for 200 more beds.

The nurses' home was built in 1938 and it, too, has been enlarged twice. The \$225,000 wing was finished in December.

The hospital has graduated 41 nurses and on August 25th will graduate 17 more. Sixty-one young women from all sections of North Carolina are now in training there.

In 1946, the hospital reported 8,334 patients, receiving a total of 63,070 days of care; 4,335 days of charity care at a cost of \$30,000; 1,288 major operations; 1,671 births, \$9.1 per cent of the Cabarrus County total. Births in 1937 numbered 105.

Regular meeting of the CATAMBA VALLEY MEDICAL SOCIETY, August 14th, at 6:30 p. m. at Hotel Hickory, Hickory, N. C. Program:

"Summary Report of Mass X-ray Survey," Dr. E. H. Ellinwood, Hickory.

"Use of Streptomycin in the Treatment of Tuberculosis," Dr. S. M. Bittinger, Oteen.

Moving Picture on Cancer, "Traitor Within."

Case Reports from Floor.

DR. COLIN A. MUNROE announces the opening of his office, 305 Professional Building, Charlotte, N. C. Practice limited to Gastro-enterology.

DR. JACK HARRELL NEASE announces the opening of offices for the practice of General Surgery, 101 South Hayne Street, Monroe, North Carolina.

DR. JAMES DAVID STRATTON, recently of the Illinois Eye and Ear Infirmary, announces the opening of offices in the Liberty Life Building, Charlotte, N. C., for the practice of Ophthalmology.

## DIED

DR. W. A. PLECKER DIES AFTER BEING HIT BY CAR  
Dr. Walter Ashby Plecker, 86, retired chief of the Bureau of Vital Statistics of the State Health Department, died July 31st, at Medical College of Virginia Hospital shortly after he was struck by an automobile as he crossed the street in the 4200 block Chamberlayne Avenue, Richmond.

Dr. Plecker suffered a fractured leg in the accident, which occurred at about 8 p. m. His death was attributed to the injury and shock.

Dr. Plecker organized the Bureau of Vital Statistics in 1912 and served continuously as its head until his retirement in 1946.

He was graduated from Hoover Military Academy and attended the University of Virginia. He received his degree in medicine from the University of Maryland in 1885 and practiced as a country doctor for 25 years, two of which were spent in Alabama and 23 at Hampton.

In 1900 he joined the health department of Elizabeth City County and there established a systematic method of keeping health records and vital statistics, giving that county a national reputation in that field.

Between 1910 and 1912 he was with the Rockefeller Foundation in a State-wide survey of hookworm conditions. When, in 1912, the need was seen for establishment of a State Bureau of Vital Statistics, Dr. Plecker was called to Richmond to aid in drafting the vital statistics law, enacted by the General Assembly.

Dr. Plecker's research work, particularly since passage of the Virginia racial integrity law in 1924, won him renown as one of the nation's best informed men on racial integrity and the effect of amalgamation and cross-breeding of races.

Since his retirement, Dr. Plecker's position has been held by Miss Estelle Marks, less than two months his junior in point of service with the bureau. In recent months Dr. Plecker had devoted most of his interest to a study of the racial characteristics of Indians and Negroes, which he was preparing for publication.

Dr. Henry Charles Menzies, 73, a pioneer in the use of x-ray equipment in his section, died August 10th at his home at Hickory, N. C., after several years of invalidism following on a stroke of paralysis.

Born at Old Fort, Dr. Menzies received his medical education at Davidson College and the Post Graduate Medical School in New York. One of the first western North Carolina physicians to become interested in x-ray work, he built his own first x-ray equipment, which is now preserved as the property of Davidson.

Dr. Thomas Russell Littlejohn, president of the Sumter County Medical Association and prominent Sumter physician for many years, died at Tuomey Hospital July 26th, of a cerebral hemorrhage suffered an hour before.

Dr. Littlejohn was born in Jonesville, S. C., son of Dr. and Mrs. Kenneth M. Littlejohn, his mother being the former Miss Leila C. Bailey. He was educated at Clemson College and the Medical College of South Carolina. He began practice of medicine in 1912 at Pinewood and two years later went to Sumter and had been practicing there ever since, except for one year while serving in World War I.

He was a member and former deacon of the Sumter Presbyterian Church, the American Legion, the Kiwanis

Club, and of the County, Tri-State, Southern and National Medical Association at his death. He was a past president of the Cosmos Club of Sumter.

Dr. Lorenzo Dow McPhail, 72, died in a Charlotte hospital August 12th, after an illness of more than a year. He was born in Sampson County, educated at Chapel Hill and the University of Maryland, being graduated M. D. by the latter institution in 1900. Dr. McPhail's early practice was at Rockingham, N. C. For the past twenty years he had engaged in the practice of proctology in Charlotte.

## OUR ADVERTISERS SAY

### Schering Again Reduces Hormone Prices

Price reductions as great as 47 per cent in the cost of pure, crystalline male and female hormone preparations have been announced by Schering Corporation of Bloomfield and Union, New Jersey.

Greatly increased demands for Oreton, the male hormone (testosterone propionate U. S. P. XIII) have resulted from recognition of value of the treatment of androgenic deficiencies in men, and for the newly-discovered treatment of cancer of the female breast. Both the 10 mg. and the new 25 mg. oral form of the male sex hormone, Oreton-M (methyltestosterone U. S. P. XIII) are available in unlimited quantities at a marked saving.

Progyon-DP, alpha-estradiol dipropionate, characterized by its long-lasting effects, has also been greatly reduced in cost. Prometron, the convenient combination of Prolution (progesterone U. S. P. XIII) and Progyon-B, has also benefited from a reduction in price.

### Male Hormone Aids Premature Babies

Drs. E. K. Shelton, A. E. Varden and J. S. Mark of the University of Southern California Medical School have found that Oreton and Oreton-M work wonders on the weight of undeveloped and undersized infants. The hormone is equally effective for girls as for boys.

One hundred babies, each weighing less than five pounds, were given the male hormone orally as methyl testosterone or by injection as testosterone propionate. All gained weight rapidly, grew stronger and matured faster than babies from whom the hormone was withheld. The hormone-treated babies did not turn blue as often or as easily as did their untreated companions.

"War or No War, Depression or No Depression,"—in good times and in bad, Mead Johnson & Company are keeping the faith with the medical profession. Mead Products are not advertised to the public. If you approve this policy, please specify *Mead's*.

### Schering Announces Unlimited High-Potency Oreton-M Tablets Available

With the announcement that unlimited supplies of Oreton, testosterone propionate, and Oreton-M, methyltestosterone, are now available, Schering has also introduced a new 25 mg. high-potency tablet of Oreton-M, which offers greater convenience and economy to the patient. This objective has been attained by completion of the new Schering manufacturing plant unit at Union, New Jersey.

CANCER in the right half of the colon may give no symptoms; and, since these tumors bleed easily, the first symptoms may be those resulting from anemia.

## BOOKS

**INTRODUCTION TO MEDICAL PSYCHOLOGY**, by L. ERWIN WEXBERG, M.D., Director, Bureau of Mental Hygiene, District of Columbia. *Grune & Stratton*, 443 Fourth Ave., New York. 1947. \$3.50.

The author, finding none of the textbooks available suitable for the teaching medical psychology to undergraduate medical students, has written this text with the future physicians special psychological requirements in mind. The basis of the book is the course of lectures given by the author to such students, which lectures were built up and improved by the trial-and-error method over a period of eight years.

A great amount of extremely important matter he has succeeded in compressing into a very small compass.

**TOMORROW'S FOOD: The Coming Revolution in Nutrition**, by JAMES RORTY and N. PHILIP NORMAN, M.D. Foreword by STUART CHASE. *Prentice-Hall, Inc.*, 70 Fifth Avenue, New York 11, N. Y. 1947. \$3.50.

The book is written for those perturbed by a multitude of reports of the great prevalence among us of malnutrition. This reviewer happens not to be one of the perturbed; however, it would seem that the great majority are perturbed and so the book should find a very hearty welcome.

**NEW AND NONOFFICIAL REMEDIES—1947—Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1st, 1947.** Issued under the Direction and Supervision of the Council on Pharmacy and Chemistry of the American Medical Association. *J. B. Lippincott Co.*, E. Washington Square, Philadelphia

**HOSPITAL CARE IN THE UNITED STATES: A Study of the Function of the General Hospital, Its Role in the Care of all Types of Illness, and the Conduct of Activities Related to Patient Service, with Recommendations for its Extension and Integration for More Adequate Care of the American Public.** Commission on Hospital Care. *The Commonwealth Fund*, 41 East 57th Street, New York 22, N. Y. 1947. \$4.50.

### DOCTORS, BE ON THE LOOKOUT FOR SWINDLER

One Hobart M. Prosser, alias Harry Martin Moore, is a fugitive from justice. The Federal Bureau of Investigation is seeking his apprehension on the basis of a warrant issued for his arrest in Louisville, Ky., June 6th. Prosser has defrauded a number of physicians throughout the country through the sale of Canadian stocks. When the sale transaction has been completed, Prosser, through devious schemes and devices, manages to regain possession of the stock certificate and disappears.

Prosser has undergone a colostomy and still wears a bag.

Anyone having information which may assist in locating this person is requested to immediately notify the Director of the Federal Bureau of Investigation, Department of Justice, Washington.

## Have a Coke



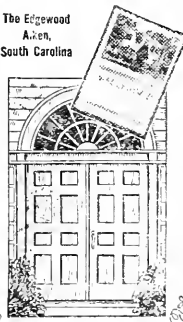
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FELLOWS OF THE TRI-STATE MEDICAL  
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AND VIRGINIA  
1947-1948

NORTH CAROLINA

Allgood, R. A. ....	Fayetteville
Andes, McT. G. (Hon.) .....	Gastonia
Anderson, C. A. ....	Burlington
Anderson, E. C. ....	Wilmington
Anderson, R. S. ....	Whitakers
Angel, Edgar .....	Franklin
Angel, Furman .....	Franklin
Armistead, D. B. ....	Greenville
Ashby, J. W. ....	Raleigh
Ashe, J. R. ....	Charlotte
Aycock, E. B. ....	Greenville
Barefoot, S. W. ....	Greensboro
Barrier, H. W. ....	Concord
Barron, A. A. (Hon.) .....	Charlotte 2
Baxter, O. D. ....	Charlotte 2
Beale, S. M. ....	Elkin
Beall, L. L. ....	Greensboro
Beam, H. M. ....	Roxboro
Bell, G. E. ....	Wilson
Bell, S. A. ....	Hamptonville
Bender, J. J. ....	Red Springs
Bender, J. R. ....	Winston-Salem
Bennett, B. S. ....	Asheville
Bennett, J. W. ....	Burlington
Benson, N. O. ....	Lumberton
Bentley, J. G. ....	Moravian Falls
Benton, W. J. ....	Greensboro
Bigham, R. S., Jr. ....	Charlotte 2
Billig, Otto .....	Durham
Billings, G. M. ....	Morganton
Bishop, W. R. ....	Greensboro
Black, G. W. ....	Charlotte 3
Blackwelder, R. G. ....	Raleigh
Blackwelder, V. H. ....	Lenoir
Blair, Andrew, Jr. ....	Charlotte 2
Boice, E. S. (Hon.) .....	Rocky Mount
Bolt, C. A. ....	Marshville
Bonner, M. D. ....	Jamestown
Bost, T. C. (Hon.) .....	Charlotte 2
Bradley, H. J. ....	Brevard
Bray, T. L. ....	Plymouth
Bridger, D. H. ....	Bladenboro
Bridges, D. T. ....	Lattimore
Britt, T. C. ....	Mount Airy
Brockmann, H. L. ....	High Point
Brooks, R. E. ....	Burlington
Broughton, A. C. ....	Raleigh
Brunson, E. P. ....	Albemarle
Buie, R. M., Sr. ....	Greensboro
Bunch, Chas. ....	Charlotte 2
Burns, J. E. ....	Concord
Butler, L. J. ....	Winston-Salem 7
Callaway, J. L. ....	Durham

Camp, Horton .....	Pittsboro
Cardwell, Willard .....	Greensboro
Carroll, R. Charman .....	Durham
Cayer, David .....	Winston-Salem 7
Cherry, J. H. ....	Asheville
Clark, H. S. ....	Asheville
Cobb, D. B. ....	Goldsboro
Cogdell, D. M. ....	Fayetteville
Cooke, H. M. ....	Charlotte
Corbett, J. P. ....	Swansboro
Cornell, W. S. ....	Charlotte 3
Cox, G. S. ....	Tabor City
Craig, S. D. ....	Winston-Salem
Crawford, R. H. ....	Rutherfordton
Crisp, S. M. ....	Greenville
Crowell, L. A. (Hon.) .....	Lincolnton
Crowell, L. A., Jr. ....	Lincolnton
Crump, C. L. ....	Asheville
Cummings, M. P. ....	Reidsville
Cutchin, J. H. ....	Roanoke Rapids
Dalton, Wm. B. ....	Greensboro
Daniels, R. E. ....	West Asheville
Davidson, J. E. S. ....	Charlotte 2
Davis, J. F. ....	Greensboro
Davis, J. W. (Hon.) .....	Statesville
Davis, R. B. ....	Greensboro
Davison, W. C. ....	Durham
Dawson, J. N. ....	Lake Waccamaw
deCamp, L. A. ....	Charlotte 2
Dickinson, Kenneth .....	Raleigh
Ditmore, H. B. ....	Marshall
Dixon, G. G. ....	Ayden
Donnelly, G. L. ....	Asheville
Draper, A. J. ....	Charlotte 4
Elfmon, S. L. ....	Fayetteville
Ellington, A. J. ....	Burlington
Elliott, J. A. ....	Charlotte 2
Elliott, W. M. ....	Forest City
Ennett, N. T. (Hon.) .....	Beaufort
Erwin, E. A., Jr. ....	Laurinburg
Fauntleroy, J. W. ....	Zirconia
Fearington, J. C. P. ....	Winston-Salem
Ferguson, R. T. (Hon.) .....	Charlotte 2
Fike, R. L. ....	Wilson
Finch, O. E. ....	Raleigh
Foster, C. B. ....	Charlotte 2
Fox, D. B. ....	Albemarle
Fox, P. G. ....	Raleigh
Freeman, A. B. ....	Randleman
Fritz, O. G. ....	Walkertown
Fritz, W. A. ....	Hickory
Gage, L. G. ....	Charlotte 2
Gallant, R. M. ....	Charlotte 2
Garvey, F. K. ....	Winston-Salem 7
Gaul, J. S. ....	Charlotte 2
Gibbon, J. W. (Hon.) .....	Charlotte 2
Gillespie, S. C. ....	Asheville
Gilmore, C. M. ....	Greensboro

Goodwin, C. W. ....	Wilson	LeBauer, S. F. ....	Greensboro
Goudelock, J. J. ....	Monroe	Livingston, E. A. ....	Gibson
Grantham, W. L. ....	Asheville	Long, W. M. ....	Mocksville
Griffin, H. L. ....	Asheboro	Love, W. M. ....	Monroe
Griffin, H. W. ....	Hickory	Lovelace, D. D., Jr. ....	Greensboro
Griffin, M. A. ....	Asheville	Lowenbach, Hans ....	Durham
Griffin, W. R. (Hon.) ....	Asheville	Lubchenko, N. E. ....	Harrisburg
Grimson, K. S. ....	Durham	Lupton, E. S. ....	Graham
Hackler, R. H. ....	Washington	Lyday, R. O. ....	Greensboro
Hagna, L. W. ....	Marion	Lyon, B. R. ....	Greensboro
Hamer, J. B. ....	Charlotte 1	MacLauchlin, W. T. ....	Conover
Harden, Graham ....	Burlington	MacNider, Wm. deB. (Hon.) ....	Chapel Hill
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Harris, I. E., Jr. ....	Durham	McBee, P. T. ....	Marion
Hart, V. K. ....	Charlotte 2	McCall, R. E., Jr. ....	Charlotte 2
Harvey, W. W. ....	Greensboro	McCutcheon, W. B. ....	Durham
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Hedrick, R. E. ....	Walkertown	McKay, H. W. (Hon.) ....	Charlotte 2
Helms, T. L. ....	Randleman	McKay, R. W. ....	Charlotte 2
Henderson-Smathers, I. C. ....	Asheville	McKnight, R. B. ....	Charlotte 2
Hester, J. R. ....	Wendell	McLeod, J. P. U. ....	Marshville
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Hipp, E. R. ....	Charlotte 2	McMillan, R. D. ....	Red Springs
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Holmes, A. B. ....	Fairmont	Marsh, F. B. ....	Salisbury
Hooper, J. W. ....	Wilmington	Martin, M. S. (Hon.) ....	Mount Airy
Hoover, W. A. ....	Murphy	Martin, W. F. ....	Charlotte 2
Hope, A. C. ....	Charlotte 2	Massey, C. C. ....	Charlotte 2
Houser, F. M. ....	Cherryville	Matthews, V. M. ....	Charlotte 2
Hovis, L. W. ....	Charlotte 2	Matthews, W. C. ....	Charlotte 4
Hubbard, F. C. ....	North Wilkesboro	Meazies, H. H. ....	Winston-Salem
Hundley, Deane, Jr. ....	Wallace	Merritt, J. F. ....	Greensboro
Hutchinson, S. S. ....	Bladenboro	Newborn, J. M. ....	Greenville
Irons, C. F. ....	Greenville	Mickley, Jack ....	Tabor City
Ivey, H. B. ....	Goldsboro	Milham, C. G. ....	Hamlet
Jarman, F. G. ....	Roanoke Rapids	Millender, C. W. ....	Asheville
Jeffreys, E. O. ....	Winston-Salem 7	Miller, O. L. ....	Charlotte 2
Johnson, H. L. ....	Elkin	Miller, R. C. ....	Gastonia
Johnson, W. M. ....	Winston-Salem	Miller, W. E. ....	Whiteville
Johnston, J. G. ....	Charlotte 4	Mills, J. C. ....	North Wilkesboro
Johnston, W. O. ....	Charlotte 4	Mock, F. L. ....	Lexington
Jones, B. N. ....	Winston-Salem	Monroe, C. R. ....	Pinehurst
Jones, F. W. ....	Newton	Moore, A. Wylie (Hon.) ....	Charlotte 2
Jones, O. H. ....	Charlotte 2	Moore, D. F. ....	Shelby
Joyner, G. W. ....	Asheboro	Moore, D. L. ....	Greenville
Justice, W. S. ....	Asheville	Moore, Oren ....	Charlotte 2
Karansky, Stanley ....	Enka	Moore, R. A. ....	Charlotte 2
Kelly, L. W. ....	Charlotte 2	Moricle, C. H. ....	Reidsville
Kemp, M. D. ....	Pinebluff	Motley, F. E. ....	Charlotte 2
Kempner, Walter ....	Durham	Munroe, H. Stokes ....	Charlotte 2
Kennedy, J. P. (Hon.) ....	Charlotte 2	Munroe, H. Stokes, Jr. ....	Charlotte 2
Kirby, W. L. ....	Winston-Salem	Nailling, R. C. ....	Asheville
Kirksey, J. J. ....	Morganton	Nalle, Brodie C. (Hon.) ....	Charlotte 2
Kitchin, T. D. ....	Wake Forest	Nance, C. L. ....	Charlotte 2
Klenner, F. R. ....	Reidsville	Nash, J. F. ....	Saint Pauls
Koonce, D. B. ....	Wilmington	Neal, K. P. ....	Raleigh
Lanier, V. C. ....	Welcome	Neblett, H. C. ....	Charlotte 2

Neese, K. E. ....	Monroe	Smerznak, J. J. ....	Concord
Newland, C. L. ....	Brevard	Smith, Annie T. ....	Durham
Newton, H. L. ....	Charlotte 2	Smith, C. T. (Hon.) ....	Rocky Mount
Nichols, T. R. ....	Morganton	Smith, D. T. ....	Durham
Noblin, R. L. ....	Oxford	Smith, E. B. ....	Enfield
Norment, W. B. ....	Greensboro	Smith, Frank C. ....	Charlotte 4
Northington, J. M. (Hon.) ....	Charlotte 2	Smith, O. F. ....	Scotland Neck
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## Bronchiectasis Clinic\*

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AND

H. H. BRADSHAW, M.D., Winston-Salem, North Carolina

**THE PLAN** of this presentation is to hit the high spots in the disease in general, to outline the cases of the four patients we have here, with Dr. Gray demonstrating the x-ray findings, and Dr. Bradshaw discussing the surgical treatment of bronchiectasis.

What I want to talk about most is three or four things that are very important and perhaps not appreciated by us all. First of all, incidence of the disease. If one looks for it he will find a lot of it. In 1944 we reviewed the cases we had studied at the Sanatorium in the chest clinic and found that, of the adult white people we saw, there was one case of bronchiectasis to every two cases of tuberculosis. In 1946 we had 89 cases of reinfection, or adult type, tuberculosis, and 54 cases of proven bronchiectasis. By proven we mean showing definitely dilated bronchi by contrast media so we see that there is a high incidence of the disease seen in any chest clinic.

Another matter of great interest was the alarming mortality rate. I doubt if that is generally appreciated. It is a dreadful disease. Perry and King of Boston, in 1939, reported on 400 cases of bronchiectasis in Massachusetts General Hospital in the period 1926-1938, most of the cases recognized in the last three or four years, that is, from 1935 to 1938. Of the 260 non-surgically

treated cases there was 26 per cent mortality, and only 90 per cent of these people could be traced. It is the clinical impression that people developing bronchiectasis before ten years of age do not live to be 40 years of age. In 90 per cent of the cases studied the disease was developed in the first decade. The 59 who were 40 and over—59 out of 400, only 15 per cent—had symptoms dating back to the first decade.

Dr. Bradshaw, who will talk to you later, has reported 141 cases seen at Jefferson Hospital between 1925 and 1935, with 25 to 30 per cent mortality before 1941. He also showed that the duration of life in the people that died was only 13½ years from the date of first symptoms, and a little less than two years—a year and eight-tenths—after the diagnosis was made.

These figures show that bronchiectasis is quite prevalent, and that the mortality rate is distressingly high.

Dr. Bradshaw believes that primary bronchiectasis develops in childhood. I don't think there is much question about it.

All of the patients we have this afternoon are adults. I did want to bring some children to stress the point that the disease develops in childhood. A lot of it follows infectious diseases, with some form of blockage of the bronchial tubes. There is bound to be blocking of the bronchial tubes and infection in the etiology of every case.

That brings us to the most important thing, the matter of prevention. If we can keep airways open

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in any respiratory infection, we will go far toward preventing bronchiectasis. Few children will expectorate, but they will cough and they will have colds, one after another. Practically all adults will have had pneumonia on several occasions, sometimes two or three times a winter, with symptoms varying from mild cough and expectoration to raising ounces and ounces of thick green sputum. Club fingers come along in the advanced stages of the disease.

These recurring episodes of pulmonary infection, called colds or flu, should be stressed. Children and adults who have these attacks over and over again every winter certainly deserve thorough study.

When these patients come into the clinic, by postural drainage we obtain sputum which is green and foul-smelling—not always, but generally. A history of blood spitting is common in the older children and adults.

The treatment, of course, is surgical, if you can remove the seat of the disease. There is no question about it. There are cases in which this can not be done, because the disease process is too extensive to be eradicated in toto. Then, as in any other suppurative disease, the most important thing is to establish drainage. The best way to drain a bronchial tube is to turn it upside down. One must have a pretty good idea of the bronchi involved before doing postural drainage. That is where the bronchoscopogram comes in. Without that few cases of bronchiectasis can actually be proven.

We have four patients here. The first, a housewife, has been wheezing and rattling a long time. She said she has wheezed and rattled since she was old enough to remember. She would have one cold after another, beginning in the fall and lasting practically through the winter. On two different occasions, she had spit up blood. She was examined and a bronchogram made which Dr. Gray will demonstrate. It shows bronchiectasis pretty well confined to one lower lobe. Because of the fact that she had had trouble so long surgery was advised and this was done. Since operation she raises no sputum whatsoever. She has been through the winter without trouble and feels as though her chest has been unzipped. She didn't get a full breath before. She is now perfectly comfortable. She has gained some weight since operation and never had gained before and held it.

DR. C. L. GRAY: I don't know how well you can see the films from where you sit. This is the initial film, without iodized oil. You will notice in the lower lungs, bilateral thickening, more marked on the left side behind the heart.

I rate painstaking x-ray examination second only to the carefully taken and evaluated history. Were you to see the film without information about the patient it would be difficult to say whether the changes in this picture were due to acute respira-

tory infection. It is not unlike what you would see in a patient with a recent cold. This lady has been coughing for a number of years, raising an increasingly copious quantity of sputum and one can almost without bronchogram say she has bronchiectasis in the left lower lobe, possibly right lower lobe and here, after mapping the lung field with iodized oil, we see the form of the bronchial tree on the right side—upper, middle and lower lobes. In the left, however, there is distinct cylindrical dilatation of the bronchial tree. You will notice that the terminal bronchioles are sharply cut off, a finding which one can assume is due to retained secretions and products of infection in the lower lobe on that side. This is a relatively typical bronchogram of a patient with unilateral lower lobe bronchiectasis. The upper lobe on the left side, as you can see, shows the characteristic feature of the pattern with iodized oil. I think that summarizes her case.

DR. BONNER: This gentleman was first seen when ten years old and the mistaken diagnosis of primary tuberculosis was made, because there was an open case of tuberculosis in the family, and a strongly positive tuberculin reaction. Diagnosis of primary tuberculosis was made. Three or four months later he came back raising purulent sputum and no tubercle bacilli could be found. On postural drainage he coughed up purulent matter by the spoonful. It has been our experience whenever purulent sputum is present in a case of tuberculosis there is no trouble in finding tubercle bacilli. A bronchogram was made which shows pretty advanced bronchiectasis and the lower and middle lobes were removed. Dr. Bradshaw will tell you about those things. This fellow, since the removal of his lobes, has gotten along well, and is now a dare-devil driver at some of the fairs and carnivals, which he claims is safer than driving along the highways. Dr. Gray will show you his films. He was operated on in 1941.

DR. GRAY: This patient's x-ray films show fairly the characteristic picture of bronchiectasis involving the right lower lobe. The left lung field appears to be fairly clear. There is some evidence of atelectasis on the right side as evidenced by the displacement of the midline structures to the right side, with some collapse of the intercostal spaces on that side. I might add before going further that it is very, very important to attempt to map out both lung fields in all lobes if possible. That is not always as satisfactory as we would like for it to be, but it is very evident that it does very little good to remove a lower lobe from a patient who has middle or upper lobe involvement. It only eliminates a portion of the disease and the patient is going to be helped very little. A bronchogram was done on this patient when he was younger than

now. The middle lobe as far as we can tell was not involved at that time.

This is an oblique film and shows the form of alveoli in the left and right lobe dilated, the terminal bronchi being shut off by retained secretion and fluid distal to the point of the filling by oil.

This boy has been operated upon. Dr. Bradshaw will discuss that. This is the post-operative film, not bronchogram. There are markings down to the dome of the diaphragm indicating that the left upper lobe, which was left intact and not involved by bronchiectasis, has completely filled the lung field on that side.

This shows the resection on the right and there again the filling up of the lung field by right upper lobe. This boy did not have complete filling of right upper lobe on initial examination but the left was perfectly normal.

DR. BONNER: When we saw this patient two years ago, he had had frequent colds and coughed and raised quite a bit of sputum since he was a boy but hadn't thought of himself as having a great deal of trouble. He managed to get in the Army in 1943 but because of chronic pneumonia he was discharged after five months. His cough never did clear up and his sputum markedly increased and when we saw him he was raising cupfuls of sputum. Bronchogram will show pretty extensive lesions with marked atelectasis, and because he was in pretty poor general condition operation was deferred. He was raising half a pint of sputum in 24 hours. The lower lobe of the left lung was finally removed and since then he has been more or less free of cough. He did have something not unusual with bronchiectasis. This happened, too, after lobectomy—he developed osteomyelitis. Most such patients develop metastatic foci somewhere. That is one of the things that kill them. This boy was lucky enough to get the thing drained. I don't know whether Dr. Register is here. I don't know what was found but I imagine it did come from the old bronchiectasis. You don't raise any sputum now, do you (to patient)?

PATIENT: No, sir.

DR. GRAY: Plain film on this boy shows bilateral lower lobe pneumonia in the area of the left lung. It might have been mistaken for metastatic nodules except for a turn of events that did not bear that out. There is evident thickening in left lower lobe indicating infection and enlargement of those bronchi. The bronchogram shows characteristic bronchial enlargement in the left lower lobe, the right appearing normal. Here is dilatation in a branch of the upper lobe bronchus on the left side.

This is a film on this boy following operation showing the left upper lobe now to have completely filled the thoracic space on that side. It was

made four days ago. You can see evidence of infection in the base of that lobe and time will tell whether, by further bronchograms, there will develop an active process in the base of the left upper lobe.

DR. BONNER: This patient didn't recall having raised sputum from childhood. He dates it to three years prior to a terrific pulmonary hemorrhage. He came to us because of the hemorrhage, and by postural drainage we were able to get characteristic purulent sputum. Bronchogram showed pretty extensive lesion. This boy has a pretty bad cold but he isn't raising purulent sputum.

DR. GRAY: Here we see again the bilateral lower lobe pneumonia, with apparently heavier involvement on the right. However, the bronchograms do not bear that out. We see a marked dilatation of the entire bronchial tree on the left side in the lower lobe. The right middle and lower lobes here are fairly well filled, a very small portion of the right upper, and we see no indication of bronchiectasis where pneumonia appears to be most severe. This, incidentally, is a post-operative film. It shows dilatation on the right side, and at the seventh rib on the left. This is an oblique film prior to lobectomy and shows dilated lower lobe bronchiectasis on the left side.

DR. BONNER: Dr. Bradshaw now will discuss the surgical treatment of bronchiectasis.

DR. H. H. BRADSHAW: Mr. Chairman, Ladies and Gentlemen: When my activities were transferred from Philadelphia to the South, I hoped and expected that bronchiectasis would be rarely seen. Those of us who had experience with pulmonary lobectomy and pneumonectomy in the early days can appreciate that point of view. However, fortunately, the success of such operations has greatly improved. As recently as fifteen years ago it would have been impossible to have presented four patients who had successful lobectomies for bronchiectasis, especially if the disease had been bilateral. At the present time, the operative mortality in patients with single-lobe disease is less than 1 per cent. This reduction in mortality has been accomplished as a result of the contributions of many individuals. Perhaps the greatest single factor is in the proper choice and administration of the anesthetic. Of course, many advances in the technical aspect of the surgical problem have been improved and are still constantly being improved upon.

The operation for single-lobe disease is almost perfect. In other words, the mortality is low and the patient is relieved of his cough and sputum. In bilateral involvement, a perfect result is not always obtained because it is often impossible to remove all of the involved lung. In young patients, I think one is justified in removing certainly both

lower lobes and the middle lobe, and, as evidenced by the work of Graham and others, three lobes and a part of the fourth lobe may be satisfactorily removed and have the patient thereafter capable of ordinary physical activity.

It seems advisable, in most of these patients at least, to do the operation during the spring, summer and fall months; in other words, not to operate in months in which most upper-respiratory infections occur. Postural drainage and penicillin should also be used for a few days before operation, since infection is the main complication. The incidence of empyema following removal of a lobe or lobes has been greatly lowered, due, I believe, to the use of more careful surgical technic, plus the use of antibiotics.

The average hospital stay of these patients formerly was 35 days because of infection. At the present time the average hospital stay is nine days. The main concern of the surgeon now after performing a lobectomy is to obtain rapid reexpansion of the other lobes.

Our discussion has concerned itself with so-called bronchiectasis, in other words, the type of bronchiectasis for which no known etiologic agent has been identified. Other types of bronchiectasis as a result of foreign bodies, tumors, abscesses, tuberculosis, etc., frequently present other problems which will not be discussed at this time.

#### Questions

DR. P. D. CAMP, Richmond: First, I would like to know the opinion of these gentlemen of the etiologic relationship between chronic paranasal sinusitis and bronchiectasis? Second, I would like to know if they use surgery on all unilateral cases as soon as diagnosed? Third, I would like to know—from what you have said, I don't guess you do—if you believe in using iodized oil as a procedure for treatment, not just a diagnostic procedure; and lastly, I would like to know if you think iodized oil in the majority of cases causes the slight hemorrhage that Dr. Bradshaw spoke of?

DR. BRADSHAW: The question of paranasal sinusitis and bronchiectasis, of course, is not settled. If you review a series of patients with bronchiectasis—and we have had occasion to review over 700—and study sinusitis by x-ray or transillumination, you will find about half the patients have definite evidence of sinusitis. We thought when we set out that we would find a much higher incidence of paranasal sinus involvement, but those are the figures I gathered. I used to think sinus infection, post nasal drip, secondarily involved the bronchial tubes. I think it is just as sensible to think of the process as working in the reverse. A man coughing secondarily involves the sinuses. I don't know how to prove it but it seems as sensible one way as the other.

On the question of surgery in unilateral cases, I think it again requires a certain amount of judgment. If you have a patient that has lived 40 or 50 years with a chronic cough, I wouldn't urge that patient to have operation. He has gotten along pretty well all these years. Again you have to temper advice with a certain amount of judgment. Certain young children I think ought to have it done. As Dr. Bonner pointed out, the mortality rate in the untreated is about one-third of the patients.

As to the question of iodized oil in treatment, that has been abandoned many years. Pinnex started it at the Jackson Clinic in Philadelphia. I used to hold as they held at that clinic. We had dozens and dozens of patients. We had to learn to pass the bronchoscope where people had iodized oil some of the time. Every patient who would get iodized oil would tell you he was temporarily improved. It has heavy specific gravity. It floats some of the material up. They tell you they can raise much better and feel better for a number of days. That is the usual thing to expect, but it is a very temporary thing and requires repeated installations.

The question of whether iodized oil causes hemorrhage of the alveoli or not I don't know. We have had to examine many such patients. There is some evidence of mild irritation, not marked, but definite, and whether all people get a certain amount of irritation or not, I don't know. It is a common thing, as you know, to have a patient run a degree or so of fever after iodized mapping of the lung field. Whether that is evidence of irritation of the alveoli or not, I don't know.

#### ADVICE ON THE SEPTIC MOUTH

(E. W. L. Wiener, in *The Post-Graduate Med. J., Feb., via The General Practitioner of New Zealand & Australia, June*)

When a patient comes in with an alveolar abscess or an inflamed impacted third molar and tells us his physician says he must have any dental surgery "until the swelling has gone down," we are put in an awkward position. The sooner we get that patient into the chair, remove those teeth under a general anesthetic and establish drainage the better for our patient. It is true that you must not operate in such conditions with a local anesthetic, but that is all. The medical practitioner sees far more cases of Vincent's infection in its early stages than does his dental colleague, and if medical practitioners would either treat it themselves or refer it to us for treatment, it would go a long way towards reducing the incidence of a disease which is an important factor in reducing the general health.

Any deposits on the teeth should be removed carefully, gently and thoroughly. If the disease is in the early stages, instruct the patient to cleanse the teeth and gums night and morning with warm water and common salt, and then to spend five minutes by the clock washing out the mouth with a mixture of half peroxide and half hot water. As an adjuvant a 5-gr. tablet of potassium chlorate dissolved slowly in the mouth three or four times a day. This simple treatment will prove adequate for most cases.



## Clinico-Pathological Conference\*

W. M. NICHOLSON, M.D., and C. C. ERICKSON, M.D., Durham, North Carolina  
Duke University Medical School

A 17-YEAR-OLD white boy first admitted to the Duke Hospital July 27th, 1945, complained of swelling of his entire body for a period of four weeks.

The family history and past history revealed little of significance except for one fact; he stated that he had had repeated attacks of sore throat during the past four years which were diagnosed as tonsillitis.

Some six weeks before his admission to the hospital he stuck a nail in his left great toe and was given an injection of tetanus antitoxin. He had been previously skin-tested to this material. The toe healed without sequelae within a period of two weeks. Four weeks before admission he noticed puffiness about the eyes which would usually subside in the afternoon, but gradually progressed to the point that there was considerable edema of both eyes, particularly of the right. One week before admission he noticed edema of the ankles, thighs and abdomen. Eight days before admission the patient had a tonsillectomy because of the repeated attacks of tonsillitis and because of finding albumin in his urine. It is to be noted that the albumin and edema were present before the tonsillectomy was performed. However, the edema became more marked after this operative procedure. One week before admission the patient developed epigastric pain, watery diarrhea, nausea, vomiting and generalized abdominal discomfort. He also noticed that he passed scanty and smoky urine. There has been a gain of eleven pounds in the few weeks preceding admission to the hospital.

The patient was a well developed, edematous white who appeared ill and had moderate respiratory distress. The edema was generalized to include the face, neck, thoracic wall, abdominal wall, sacral area, thighs, ankles, feet and hands. Signs of fluid in both pleural cavities and in the abdominal cavity were elicited. There was enlargement of the cervical and axillary lymph nodes. The ocular fundi were described as being normal. The heart was not enlarged to percussion; sounds were of good quality; no murmurs were heard; blood pressure 125/80. A questionable mass was felt in the right upper quadrant which was thought to be liver, but this was not definite.

The hemoglobin was 100 per cent, r.b.c. 5,190,000, w.b.c. 5,360 with a normal differential picture on admission to the hospital, and there was a pro-

gressive fall of the red count and hemoglobin so that by November 19th the hemoglobin was 49 per cent, r.b.c. 2,540,000. The blood remained at approximately this level throughout his hospital stay in spite of vigorous therapy. Urinalysis revealed albumin in amounts that varied from .10 grams to 20 grams per 24 hours. For the most part, however, the amount excreted per 24 hours remained at levels not exceeding 5 grams. Repeated examinations revealed numerous granular and on occasions hyaline and rarely waxy casts, one to two r.b.c. per h.p.f. and an occasional w.b.c. On one occasion doubly refractile granules were demonstrated in the urinary sediment. The specific gravity during the first two months would be on occasions as high as 1.031, but for the last few weeks of his hospital stay at no time did it go above 1.017. The blood n.p.n. varied between 35 mgms./100 c.c. and 108 mgms./100 c.c.—for the most part around 50 to 70 mgms. per cent. The total proteins on admission were 4.3 grams per cent and an albumin-globulin ratio of .19. On September 15th the total proteins were 4.1 grams/100 c.c. and an albumin-globulin ratio of 1.4 and on September 14th the patient was started on acacia and received 30 grams in 500 c.c. of distilled water each day. By September 22nd he had received a total of 105 gm. acacia and the total proteins had fallen to 2.9 grams with an albumin-globulin ratio of .06. No further acacia was given until October 23rd. A note is made on the record that there was subjective improvement with the acacia, but there was no objective alteration since the patient remained edematous and had had no diuresis. On October 23rd acacia was started again and on November 2nd the total proteins were 2.3 grams and on November 14th 1.9 grams with an albumin-globulin ratio of .7. Careful search of the record fails to reveal any objective improvement whatsoever in the patient during the time of acacia administration. The serum cholesterol on admission was 550 mgms./100 c.c. and reached the highest level of 764 mgms./100 c.c. on September 10th and the lowest concentration was on November 29th when it was 250 mgms./100 c.c. The lower cholesterol figure corresponds with the cessation of the administration of acacia. The vitamin A of the blood on July 27th was 31 IU/100 c.c. and two weeks later was 146 IU/100 c.c. The carotene was within normal limits. On admission the serum chloride was 608 mgms./100 c.c. and on December 1st was 723 mgms./100 c.c. Prothrombin time was normal. The serum bilirubin was never found to be elevated. The PSP excretion on admission was

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75 per cent and decreased to 25 per cent with a flat curve on January 21st. Repeated throat cultures never revealed the presence of beta hemolytic streptococci. The ECG report on July 28th showed the record to be within normal limits. On September 5th T 1 was slightly low, but the record was still within normal limits. On December 1st, T 1 was abnormally low and on December 6th showed a lot T 3.

During the six-months stay the patient was tried on many regimens for the therapy of renal disease. The one form of therapy that did not alter with the changes of regimen was the fact that he was not given a high-sodium intake; this was always maintained at a very low level. The regimens included a low-protein diet, a high-protein diet, cereal-rice-fruit diet, and on each of these regimens some improvement was noted after a few days, but again all symptoms of edema returned. He received plasma, whole blood, amigen, potassium nitrate, acacia and erythrol tetranitrate. None of these procedures produced any appreciable diuresis. He also received hypertonic glucose with the same results. During the hospital stay he developed ascites and fluid in the pleural cavities which necessitated removal by paracentesis. On December 5th he had a severe pain in the left costo-vertebral angle with an elevation of temperature to 39°, and it was thought that he had a pulmonary embolus. He was very ill for ten or twelve days; however, he did rally and return to his normal nephrotic state. He was discharged from the hospital on January 29th, 1946, not improved.

From his discharge from this hospital in January until his readmission on June 18th, 1946, he had been confined to a hospital. He had had on two occasions a paracentesis abdominis. One month before readmission he developed fairly severe nausea and vomiting, and a cough which was productive of blood-tinged sputum. The edema had become more marked. He had also had intermittent constipation and diarrhea without melena. He had been bedridden for two weeks previous to admission and after being confined in bed small blisters appeared over his edematous feet, and these had become secondarily infected.

Physical examination at this time revealed a definite increase in the blood pressure which was now 154/104. The edema was as on previous examinations, however, the patient had lost muscle tissue. The temperature was 98.3°. There were small exudates in the ocular fundi; no hemorrhages were seen. Rales were heard at both lung bases and again signs of fluid were present. The heart was enlarged to percussion; sounds were of only a fair quality; the rate was rapid, the rhythm gallop; no murmurs could be heard. Signs of fluid in the abdomen were elicited; no masses could be made out.

The laboratory studies were essentially those on the previous admission, with anemia much more marked—hemoglobin 43 per cent, r.b.c. 1,800,000; there was no change in the white cells or the differential. The urine was essentially unchanged. The PSP excretion test showed none excreted after two hours. The total output was 30 c.c. of urine. The blood NPN was 168 mgms./100 c.c.; however, this rose to 320 mgms./100 c.c. shortly before his death. The serum calcium was 6.8 mgms./100 c.c.; phosphorus 5.8; chlorides 568 mgms./100 c.c. The total proteins and the albumin-globulin ratio were essentially unchanged. The cholesterol was 200 mgms./100 c.c. The Mosenthal concentration test could not be performed because of the inadequacy of the specimen. However, the routine urine examinations did reveal a hyposthenuria. The ECG at this time: rate 83, P-R interval .16 sec. QRS interval .08 sec. Since December 6th T 1 is flat, T 2 and 3 diphasic. Diagnosis: Normal sinus rhythm. Borderline left axis deviation.

The course in the hospital was essentially that as on the previous admission; however, the patient was definitely more ill. Digitalization was carried out and again various diuretics were tried. Abdominal paracentesis removed six litres of straw-colored fluid, containing 2.5 grams 100 c.c. of albumin and the serum proteins on the previous day were 5.2 grams 100 c.c. Three whole-blood transfusions were given without any improvement of the anemia.

On the third hospital day the patient developed acute tenderness in his right leg muscles with a positive Homan's sign. Ligation of the veins in this leg was thought inadvisable. On the twenty-second hospital day, while in process of having a finger prick for a routine blood examination, jerky movements of the right arm developed which soon extended over the entire body and he became somewhat spastic. Calcium gluconate was administered intravenously and the patient responded within a matter of ten minutes. Two days later he had another such convulsion after the same procedure as outlined above. He also developed petechiae over the chest and arms. He was alert and conscious throughout most of the hospital stay. One week before death the serum calcium was 5.7 mgms./100 c.c. and phosphorus was 9.8 mgms./100 c.c. On the thirtieth hospital day the patient requested a bath and a change of linen, telling the nurse that he knew he was going to die. He died quietly a few hours later.

#### ANATOMICAL DIAGNOSIS

Extensive pleural adhesions (old pulmonary) and pleural infection; chronic and subacute peritonitis; chronic glomerulonephritis of nephrotic type (terminal phase of lipoid nephrosis?); uremic serofibrinous pericarditis; hydrothorax, ascites, anasarca; hypoplasia of bone marrow; anemia; dila-

tation of heart; pulmonary edema and focal hemorrhage; right auricular mural thrombosis; massive deposits of gum acacia in epithelium of the liver and kidneys and in reticuloendothelial cells of lungs, spleen, lymph nodes, and bone marrow; fat necrosis and focal necrosis and focal scarring of pancreas.

#### SUMMARY OF GROSS EXAMINATION

The heart is enlarged, both ventricles being moderately dilated. The aorta is interesting because of the extraordinary degree of fatty infiltration of the intima in its distal portion. There is diffuse thickening of the pleura over both lungs, and there are many old fibrous adhesions, all being adequate evidence of a previous extensive inflammation of the pleura. Both lungs contain some edema fluid, and there is some increase of the consistency of the parenchyma. There is nothing grossly remarkable about the spleen, liver or kidneys except for the light color of the liver and pale appearance of the kidney surfaces. Dr. Forbus in reviewing the kidneys called attention to the speckling of ochre-colored spots on renal cortical surfaces. The lymph nodes show no conspicuous enlargement, nor is their architecture grossly unusual. Review of the brain, as well as other organs and tissue, does not show significant gross lesions. Thus, in the gross examination the findings are not very helpful and may be summarized as evidences of old pleural inflammatory process, and the suggestive alteration in color of the liver and kidneys.

#### SUMMARY OF MICROSCOPIC EXAMINATION AND DISCUSSION

This interesting case of renal disease is interpreted as presenting the fairly characteristic clinical history of nephrosis progressing to the terminal picture typical of glomerulonephritis. Histologically, the anatomic changes are characteristic of chronic glomerulonephritis. In contrast to the almost normal gross appearance of the kidney, the microscopic picture shows widespread injury. The glomeruli uniformly show hyalinization, crescent formation, or adhesions with albuminous material in the glomerular spaces.

The tubular epithelium shows conspicuous alteration with notable epithelial cell vacuolization. In addition, one notes many foamy macrophages in the glomerular spaces. Fat stains show relatively little fat deposit in vacuolated cells. The changes of the interstitial tissues are extensive, with infiltration of inflammatory cells throughout. Thus, we may conclude that the changes are now histologically indistinguishable from chronic glomerulonephritis and resemble not at all the earlier stages recognizable as lipid nephrosis.

In addition to the study of the basic renal disease in this case, described briefly above, another unusual finding provoked considerable interest. In addition to the vacuolated cells in glomeruli and

tubules noted above, clumps and masses of large macrophages were observed, especially in the lymph nodes, the spleen, the liver, and the lungs. In addition, there is a bizarre foamy appearance of the central hepatic parenchyma, and a conspicuous reticuloendothelial hyperplasia of the lymph nodes. Most remarkable was the fact that such vacuolated macrophages or foam cells stained poorly or not at all with the usual fat stains at the time this case was first reviewed. Further study was directed toward determining what the process was that might account for this peculiar and extensive lipid-like disturbance. The various lipid metabolic disturbances were considered.

In the lungs the alveoli are filled with these vacuolated or granular macrophages, and the interstitial tissues similarly show the presence of macrophages and mononuclear cells. The only other change of interest was fibrous tissue plugs in the alveoli and small masses of fibrin-like hyalin material.

In the spleen there are scattered foamy macrophages similar to those in the lung, and reticuloendothelial lining cells of comparable appearance.

Most revealing, actually, are the changes of the liver, wherein we see central areas conspicuously altered by a foamy or vacuolar change of large swollen hepatic cells accompanied by either effacement or necrosis of intervening sinusoidal cells.

In the lymph nodes there is a remarkable reticuloendothelial proliferation with sinuses containing large numbers of the vacuolated macrophages already described. Certainly the foamy appearance of endothelial cells and granular macrophages suggests strongly being filled by a lipid-like substance.

In studying this case, the latter changes, rather than the renal pathology, occupied the attention of those reviewing the case, and it was indeed perplexing when virtually no fat could be demonstrated in any of these tissues. The problem was easily solved when attention was drawn to the "administration of gum acacia" to this patient! The significance of such therapy is at once apparent to anyone who is familiar with the fate of acacia administered intravenously either to the human or the experimental animal. The changes in this case, having to do with vacuolization of cells and reticuloendothelial hyperplasia and "lack of fat" in the several organs and tissues, are quite in keeping with the appearance previously observed in similar cases of nephrosis and nephritis so treated, as well as in experimental animals where acacia was similarly administered. Comparison of these lesions with those observed in the experimental animal confirms the similarity of lesions.

Just how much injury was produced by the administration of acacia and its consequent wide-

spread storage in various sites is open to question. We have no proof in this case that it was of significance, but add that it is difficult to rule it out as a factor in producing injury or influencing function. We call attention to the marked effect of intravenous acacia on the circulating proteins and even more specific diminution of plasma fibrinogen, as reflecting its effect on the liver. The storage of such material in the liver is characteristic, but elsewhere it is an unusual finding. Acacia appears for a time at least to replace plasma proteins, rather than to supplement them.

Thus, this is a case which early exhibited the typical features of nephrosis (lipoid nephrosis?). The terminal clinical picture changed so that the diagnosis of chronic glomerulonephritis of nephrotic type was made. The latter diagnosis was essentially confirmed by the autopsy findings of typical anatomic lesions of chronic glomerulonephritis. This case appears to support the thesis that the nephrosis of lipid type progresses toward the same terminal picture as glomerulonephritis, and that they may well be only different manifestations of similar processes. The case showed the unusual but typical anatomic changes associated with acacia administration. Reference to two similar cases is made, which were examined at autopsy two and one-half and five years following acacia therapy.

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### SOME IMPORTANT POINTS IN HEMATOLOGY

MEYER<sup>1</sup> emphasizes the facts that in the anemias due to blood loss, the color index is very low; that whenever the reticulocytes in the peripheral blood of the untreated individual exceed 0.9 per cent, either the patient is losing blood or blood is being destroyed at an excessively rapid rate—a hemolytic anemia; and that the examination of the platelets in the peripheral blood smear is extremely important and too often ignored.

As to changes in the number of platelets he makes the following tabulation:

Platelets decreased in:

Acute leukemia—lymphoblastic and myeloblastic; chronic lymphocytic leukemia

Chronic myelocytic leukemia—late; chloroma—probably; aplastic anemia

Pernicious anemia; thrombocytopenic purpura

Platelets normal in:

1. O. O. Meyer, Madison, Wisconsin, in *Arizona Med.*, July,

Agranulocytosis—(reduced if of arsenical etiology); infectious monocleucosis.

Hemophilia; lymphosarcoma; non-thrombocytopenic purpura

Platelets increased in:

Chronic myelocytic leukemia—(may be normal); Hodgkin's disease—(may be normal)

Anemia of acute or chronic blood loss; idiopathic hypochromic anemia

Polycythemia vera; Banti's disease—may be normal or decreased.

Estimates from well-made smears he regards as usually adequate.

It is important in diagnosing hemolytic anemia to note the reticulocytic count and to measure the urobilinogen in the feces. Hemolytic anemia can exist without the presence of jaundice, but not without an increased excretion of urobilinogen.

The measurement of urobilinogen in the feces is a difficult problem, one which the average hospital is not equipped to handle.

Hemolytic anemias have been reported from the use of sulfanilamide, sulfapyridine, sulfathiazole, and sulfadiazine, in many instances from very small doses.

Rh-positive blood may cause the recipient to develop anti-Rh agglutinins, which may persist indefinitely, causing the patient to get reactions from later transfusions or to have babies afflicted with erythromblastosis fetalis, icterus gravis, or fetal hydrops, even in very small doses administered intramuscularly.

#### PROGNOSIS OF ACUTE CORONARY HEART DISEASE

(G. A. Hellmuth, Chicago, in *Ill. Med. J.*, Aug.)

Infarctions of from five to 22 days duration show a fibroblastic reaction about newly formed blood vessels. By this time the acute inflammation has subsided and there is mild replacement of the necrotic tissue by connective tissue. After 22 days diffuse fibrosis is present but complete replacement by fibrous tissue and scar condensation does not occur for four to six months. Hence absolute bed rest for a period of five to six weeks until a good fibroblastic reaction occurs is imperatively indicated.

The number of patients who can return to work is surprisingly high—one-half to three-fourths of all surviving the initial attack of myocardial infarction; 30 per cent of all patients to full activity. Complete inactivity is noted in only three per cent.

The immediate and ultimate prognosis of acute myocardial infarction is very difficult to foretell, and must be always guarded.

IF NOT TRUE IN THIS SECTION, LET'S MAKE IT SO  
(O. B. Sullivan, Atty., in *Milwaukee Med. Times*, Aug.)

It is well to remember that you have six years in which to begin action for the payment of your fee, while the patient has but two years from the date of the last treatment to plead malpractice. If your action is deferred two years in selected cases that look troublesome, you will avoid automatically any allegation of malpractice, error or mistake.

## X-Ray Therapy as an Adjunct in the Treatment of Bronchial Asthma\*

### A Preliminary Report

KATHARINE BAYLIS MACINNIS, M.D., Columbia, South Carolina

Read in the Second Annual Session, Southeastern Allergy Association, Atlanta, Jan. 18th and 19th.

**T**HE USE of x-ray therapy in the treatment of bronchial asthma is not new. Schilling, in 1906, inadvertently found that a severe asthmatic was relieved for the first time in three years after a fluoroscopic examination of the chest. This observation prompted the use of roentgen-ray therapy to various parts of the body, such as the chest, sinuses, spleen, pancreas, thyroid, liver, adrenals and cervical sympathetics, either singly or in various combinations, all giving practically the same results.

Quite naturally, when one type of treatment for one disease has so many various methods of administration, there must be many theories which attempt to explain the uniformly good results. I shall not attempt to enumerate all the theories but shall briefly list the most generally accepted ones as given by Desjardins: action on the tracheobronchial lymphnodes, decrease in the secretory power of the mucous glands in the trachea, circulation of hormones, liberation of antibodies, desensitization of the body to proteins, stimulating effect on the production of eosinophiles, complex influences on the whole body.

Regardless of the location or locations of the areas treated by the roentgen-ray, the overall results are quite similar in that good results are obtained in 40 to 70 per cent of cases. This is an excellent rating, when the severity of the case is considered. All of these patients had been ill for long periods of time and the usual methods of treatment had been of little or no avail.

It must be remembered that relief from the paroxysms is not permanent but may last from a few days to many months. Very often repetition of the treatments will again give comparable results, although Maytum reports a failure after the fourth or fifth treatment.

Most of the reports on the use of roentgen therapy for asthma have been done on adult patients, the majority of whom have had allergic studies made prior to the commencement of this type of treatment. Dutton reports using the roentgen-ray in children with a "sino-bronchial syndrome."

This study which was begun by Dr. Graves and me some seven months ago contains so few patients that it hardly seems right to report it, but some of the results are so striking that they appeared worthy of comment. Since this study was

begun other patients have been added to the series, but only those original few are now being considered. This group was selected for this type of therapy because they had done so poorly under usual methods, such as diets, rests, desensitization and vaccine therapy, etc., for varying lengths of time from seven months to eighteen months. It was hoped that this type of treatment would clear up any infection that might be in the respiratory system and thus afford more comfort for the patient. The ages varied from  $2\frac{1}{2}$  years to 14 years, and one adult was included in the group.

Treatments were begun in June when the weather was good. Some of these patients were just as miserable as they had been in January. These youngsters did not fall into the sino-bronchial syndrome as described by Dutton but were rather a combination of the atopic and the sino types. None of these patients could be classed as severe asthmatics, but rather as moderately severe most of the time and with only a very occasional severe flare-up of short duration.

These patients were treated in a fairly uniform manner: the physical factors for treatment over the sinuses and mediastinum were 200 K. V.  $\frac{1}{2}$  copper plus 1 mm. aluminum filter with a skin target distance of 50 cms. The sinuses were treated using three parts: i.e., each lateral and an anterior part. The mediastinum was treated anteriorly and posteriorly using a part 10 x 15 cms. in size. When intraoral therapy was used the cone was placed in the mouth and 120 K. V. therapy was used employing 3 mm. of aluminum filter.

The interval between treatments was usually five days and for the first three treatments only one area was treated. When no untoward reactions were noted two areas would be treated: i.e., over the sinuses (which would include the pharynx) and a second area over the mediastinum. Each area received four treatments which averaged 50 r per treatment.

Two hundred r was given as an intraoral dose when intermediate therapy was used. Never more than two such doses were given in any one case. In some, exposures were given once a month two or three times following the series, with the thought that the benefit would be longer lasting. In no patient was there an exacerbation of symp-

of six months a reëxamination, both physical and roentgenological, was made and an evaluation of results noted.

The series consisted of five patients, all of whom began having treatments within two or three days of each other. This group contained one adult who completed his course of treatment and with whom we have not made contact since. The others, four children, are still under observation at stated intervals. A brief report on each of the remaining four is given.

*Case 1.*—R. D., aged 3 years. He had hives for two days after birth, none since. At 3½ months he had bronchial pneumonia followed by bronchitis and asthma at age 4-5 months. Then from 8 months to 2½ years, definite wheezing for 3-4 days out of each week was observed. This patient was found sensitive to eggs, pecan pollen and slightly to house dust. He was placed on a diet from which the offending foods were excluded, given mixed vaccine and also hyposensitizing treatments for dusts, but did not show much improvement. It was decided to try x-ray therapy and since the completion of the series, six months ago, he has had three illnesses: one an intestinal upset at the beach, one acute and severe attack of asthma, and one bad cold with bronchitis and asthma associated. This youngster has gained three pounds and the improvement generally is quite remarkable.

*Case 2.*—S. F., aged 3½ years. This little girl has been under observation for more than 18 months. She has had eczema since she was eight months old. Asthma first occurred at two years from March to June and was continuous. She seldom had bad attacks in the winter although she did a great deal of coughing at that time. I first saw her in June when she was covered with atopic eczema and coughing considerably. She had been studied elsewhere and found sensitive to animal danders, dust and wheat. These tests were repeated and it was found they gave the same reading except for wheat. She was positive to nut pollens and sea foods. It is interesting in that her father has a large sea food market and each time she enters the place or each time fish is fried at home she immediately has an attack of asthma. Last winter was filled with ups and downs for this child including two attacks of sore throat and bronchopneumonia, in addition to almost constant coughing and wheezing. In spite of it all the eczema responded and there has been no return now for nine months. X-ray treatments were given last summer and she has coughed a little and had a few rales in the chest from time to time, but no definite attacks of asthma to date. This child's emotional life has changed from whining and crying to a happy sunny disposition. (See Slide I, A and B.)

*Case 3.*—E. S., aged 14 years. This patient had bronchopneumonia at two years, seven years and twelve years. Bronchitis and asthma were present at frequent intervals all year lasting 2-3 weeks regardless of treatment. She had urticaria in nine years of age and allergic dermatitis twice. No food sensitivity was found, but she gave positive reactions to bacteria. Last winter she had bronchopneumonia followed by bronchitis and asthma for 1-3 weeks nearly every six weeks and coughing almost constantly between attacks. She was given x-ray treatments while still coughing and sent to camp for two months. There she had absolutely no trouble and no coughing this fall and toms and no side reactions, as nausea or vomiting, were encountered. Neither was there any dramatic reaction of immediate cure noted. But at the end

winter until she contracted a slight cold which lasted one week, there was at this time no asthma.

*Case 4.*—M. M., aged five years. When this little girl was almost two years old she had pneumonia and influenza and since that attacks of asthma have been more or less constant. These were always worse during and after a respiratory infection. This case has a true "sino-bronchial syndrome" according to Dutton's classification. She was given x-ray treatment over the sinuses and mediastinum, followed by treatment once a month all fall. This child has been ill almost constantly in spite of everything done until one month ago when she recovered from an attack. Since that time she has gained two pounds and been well longer than ever before (slide II, A and B), so we are hopeful that the improvement will continue.

#### SUMMARY

The use of the x-ray for the treatment of certain cases of bronchial asthma has been tried and found of benefit. It is not to be used indiscriminately, or to the exclusion of orthodox methods of treatment, but may be found of great advantage for temporary relief where the usual methods of treatment have not given all the benefits desired.

A small series of cases of moderately severe and continuous asthma in children was treated with benefits to 75 per cent of the patients. This relief was not immediate but was evaluated six months after the treatments were begun.

X-ray films of the chests show definite improvement in the pathological findings which substantiate the clinical improvement noted.

—1515 Bull Street

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#### PEPTIC ULCER—GASTRIC AND DUODENAL (C. C. Johnston, Lexington, in *Ky. Med. J.*, Aug.)

The gastric ulcer responds more readily to surgical intervention than does the duodenal lesion, with a much lower incidence of recurrence. On the other hand, carcinoma, almost never seen in the duodenal ulcer, occurs in 90% of all ulcerative lesions of the greater curvature of the stomach, 65% of those of the prepyloric area, 20% of those of the anterior and posterior wall and 10% of those of the lesser curvature.

Almost 90% of the duodenal lesions may be controlled without surgery. From 46 to 60% of the gastric lesions are being subjected to surgical extirpation.

# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### BEHAVIOUR'S IMPORTANCE

THE LIVING THING is probably definitely identified by its physical characteristics. But the important feature of the living thing is its behaviour. No other aspect of life is so interesting and of so much importance to us mortals as our own behaviour and the behaviour of others. And in the vast sweep and depth of man's ignorance there is probably no phenomenon of which man has less knowledge than of human behaviour—his own and that of others.

What is behaviour? The response of the living thing to influences that arise within and without the living thing constitutes behaviour. That response is probably represented by movements of the physical structure of the live thing. But gross movement may be so small as not to be obvious; or the movement may take place deep within the structure and be unseen from without.

If the word mind be used to refer to all the attributes of man—instincts, emotions and intellect—then behaviour may be defined perhaps as the mental state made manifest. The important aspect of behaviour is due to that fact—to its mental origin. And the attempt to understand human conduct must lead back of the physical behaviour to consideration of the origin of the phenomenon.

The response of the individual is individualistic; no two mortals probably behave exactly alike. There are two reasons for this. No two human beings are structurally identical. No two human beings live in exactly the same environment. The living thing—plant or animal, man or beast—stands alone in the universe, different in some respects from all other living things—that are, that have been, that are to be. We should think with reverence of the unceasing exercise of omniscience and of omnipotence in the Creator's avoiding exact similarity in the fabrication even of the smallest specimen of life. And those of us who spend our days in ministering to our fellow-mortals should be mindful ever that the particular individual is unique: none has been exactly like him, none will ever be identical with him. And that undoubted fact should cause one to approach the study of life in any of its forms with awe and with humility.

The concern of psychology is the normal mental state; psychiatry represents the study of the mind in some degree of disorder or of inadequacy. Psychiatry would find out, if it might, why the

human being does not fit comfortably and adequately and successfully into the world within him and without him. Psychiatry is little concerned, I hope, with mind as an abstraction. The mind at work, both in order and out of order, occupies the thought of the psychiatrist. The behaviour of folks, their doings, simple or complex, reasonable or unreasonable, destructive or constructive, are discussed in psychiatry.

I do not like the word. It sounds as exotic as the crepe myrtle would look in Alaska. No one now studies Greek, and psychiatry is as Hellenistic as Jehovah is Hebraic. But we are all dreadfully tyrannized over by language. And the tendency would seem to be altogether away from linguistic simplification. We need in our so-called scientific language such simplification of statement as the world of theology got from an uneducated, unknown, young man two thousand years ago in a brief talk from a hill-top to a multitude of people who had gathered about Him. And on another occasion He taught them how to pray.

If we cannot state it fairly simply and succinctly in words, we probably do not understand it, whatever it may be. But we are living in a time in which we are verbally enslaved. The thought, or the topic, is symbolized by many words. An effort is made to interpret the meaning of the many words by the use of many more words. Confusion becomes even more confounded.

Human behaviour must generally be of instinctive or of emotional or of intellectual origin. We deny the lower animals the power to reason; we dislike to think of any of our own behaviour as instinctive. Yet we mortals must be richer in instincts than any other animals. Instinct is the inherited tendency to behave in a predetermined way in certain circumstances. The cat will chase the mouse on sight. The mocking bird will sing when spring comes. Flight from danger is probably instinctive—and self-protective. Reasoning is not involved in instinctive behaviour. Although instinctive behaviour may be either creative or destructive, it is probably not consciously purposeful. The animal, human or what not, behaves instinctively for the purpose of affording relief from an inner tension. Sexual indulgence offers a good example of instinctive behaviour, the result of which may be bad or good. The act brings relief from the inner tension, regardless of other consequences.

We probably know little about instinct. But that it constitutes the great driving force in all life, vegetable and animal, there can be no doubt. Instinct probably has no other concern than the deep satisfaction experienced in consequence of its culmination in action. Instinct can be concerned about nothing else than such gratification. Right or wrong, justice or injustice, kindness or cruelty,

moral or immoral are words that do not appear in the lexicon of instinct. Instinct is; it dominates the world of living things. What more do we know of it?

All of us are somewhat familiar with many emotional influences that we usually speak of as feelings. Even the instinctive urges, many of them, may require the motivation of feeling to become transformed into action. But an enormous amount of human behaviour is of emotional origin—much more than we realize or would be willing to confess. Love and hate, joy and sorrow, fear and courage, frequently become transformed into impressive behaviour.

If we would be honest with ourselves and with others, we would confess that little of our conduct is the result of the utilization of our intelligence in predetermining our individual behaviour by submitting it to the processes of reasoning. Perhaps when we think we are reasoning we are generally trying to justify our instinctive or emotional behaviour by the use of such intelligence as we possess. I believe that such activity is thought of as rationalization.

If human behaviour be of such origins, the instinctive features of it as old as man's body, is it cause for wonder that it is difficult to understand it or to symbolize it in words? Yet human conduct is of paramount importance. Man's unceasing interest in the behaviour of his fellow-man keeps busy the transportation systems and the communication facilities and the printing presses. And when we meet each the other most of the talk is about human behaviour. In the home, in the school, in the church, in society, in government, in industry, in the court room, there is increasing need of man's understanding of man—of others and of himself. Such a service should be rendered by modern medicine. But can the individual understand the universe, man's environment, and man himself, who spends his life in responding to his environment, well enough to enable him to function helpfully as Man's Behaviour-Counselor? Can the doctor rise to such a level? Such a counsellor should be as wise as Plato, as courageous as Socrates, as humble as the Mother of God.

## UROLOGY

RAYMOND THOMPSON, M.D., Editor, Charlotte, N. C.

### MANAGEMENT OF URINARY TRACT EMERGENCIES BY THE GENERAL PRACTITIONER

#### II

IT WILL be noted that this is abstracted from the second (and final) installment of a presentation<sup>1</sup>

1. L. W. Lee & Edwin Davis, Omaha, in *Neb. Med. J.*, July,

of this subject. Installment I was carried in our issue for July.

Diagnosis of the emergency of acute pyelonephritis is made from fever, with or without chills; frequency of urination; burning; and tenderness on palpation in the renal area. There may be rapid pulse, nausea and vomiting, and if the ureter is obstructed typical renouretal colic. Pyuria is present, unless there is complete block of the ureter.

The immediate attack is treated by bed rest, sulfadiazine, penicillin, diuresis, and catharsis. In case of obstruction of the urinary tract, indwelling catheter drainage is needed for tiding over.

Acute cystitis may or may not be due to upper-tract infection. Colon bacillus is the most common pathogen. The acute condition is treated with penicillin, sulfadiazine, and local bladder instillations or irrigations.

Acute prostatitis is manifested by severe burning, tenesmus, frequency, urgency, pain deep in the perineum, and fever. The urine is cloudy in both glasses. Treatment includes penicillin, sulfadiazine, very gentle massage, also, if it does not cause great pain. The development of a prostatic abscess is indicated by deep boring pain felt in the rectum, and by increasing urinary obstructive symptoms. Abscess may rupture into the urethra; best treatment is by open perineal dissection under caudal anesthesia.

Acute epididymitis is characterized by a rapidly developing, very painful induration of the epididymis soon followed by edema of the tunica and subcutaneous tissue and redness of the skin. It is treated by bed rest, scrotal support, sulfadiazine, and penicillin. The tendency is toward spontaneous recovery over a period of several days. The induration subsides more slowly than the pain and temperature. Suppuration requires incision and drainage, or excision of the entire inflammatory mass including the testicle may be necessary.

Injuries to the kidney may follow a severe blow in the renal region as in falls; and in automobile, athletic, industrial and farm accidents.

The emergency usually resolves itself into either requiring nothing at all or nephrectomy.

Rupture of the bladder, usually results from a direct blow over a full bladder, and may result from mild trauma. It is diagnosed by suprapubic pain, painful urination or total inability to void, abdominal rigidity, and the shock syndrome. Unless treatment is instituted within the first 24 hours after injury the prognosis is grave.

Urethral injuries occur from external violence or from faulty instrumentation. Diagnosis is by pain in the perineal area or urethra, hematuria, painful and difficult urination or total inability to void, and tumor formation due to blood and extravasated urine. Secondary infection and even gan-



grene may develop. Diversion of the urinary stream by suprapubic cystostomy, and if the patient's condition permits and facilities are available plastic repair is far better carried out at the time than postponed until complicated by infection and scar tissue. Sulfadiazine and penicillin are of value in keeping infection under control while the urethra is healing.

Urinary stone and sulfonamide crystal agglomerates are the most common causes of obstructive anuria. Diagnosis is made by catheterization, cystoscopic examination, ureteral catheterization, x-ray of abdomen, and retrograde pyelographic study. Treatment is ureteral catheterization if technically possible, allowing the catheters to indwell if the obstruction is passed, otherwise immediate ureterostomy or nephrostomy should be done, as the anuria will progress to uremia if not relieved.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### PREFERENCE AS TO STREPTOMYCIN, SULFONAMIDES AND PENICILLIN<sup>1</sup>

STREPTOMYCIN has proved to be the most effective agent against tularemia, gram-negative bacillary infections with bacteremia, influenza bacillus meningitis, and urinary infections due to sensitive organisms. Results in human tuberculosis cannot as yet be evaluated.

Sulfadiazine is the drug of choice for meningeal infections. Sulfonamides are effective in streptococcal and pneumococcal infections, the dysenteries, and urinary-tract infections due to gram-negative bacilli.

Penicillin is the drug of choice in all gram-positive infections (staphylococci, pneumococci, or hemolytic streptococci), and in gonorrhea and syphilis.

The convalescent diphtheria-carrier state is effectively treated with 120,000 to 160,000 units of penicillin daily for seven to 10 days; a longer period is required for elimination of the chronic nonconvalescent carrier state.

Penicillin has completely altered the course of bacterial endocarditis due to the non-hemolytic streptococcus, 60 to 70 per cent of patients have had complete arrest of disease for period of six months to two years. Minimum dosage is 200,000 to 500,000 units daily for three to six weeks. Heparin is considered unnecessary.

Recovery rate in cases of endocarditis due to staphylococcus has been 10, to pneumococcus 25, and to hemolytic streptococcus 50, per cent.

Prophylactic use of penicillin in all patients

with valvular heart disease during tooth extraction is advisable.

The problem of streptomycin therapy is more complex than penicillin therapy as the gram-negative bacilli vary widely in susceptibility to streptomycin. Multiple intramuscular injection is the preferred method of administration. Side actions to streptomycin therapy are skin eruptions, increased number of casts in the urine, and vertigo.

A member of the Mayo Clinic Staff<sup>2</sup> contributes these points:

Some of the most striking clinical results with streptomycin have been in the treatment of tularemia. In the past, patients who had tularemia were frequently ill for as long as 12 to 16 weeks and many failed to survive. The average dose of streptomycin used has been 2 gm. per day for seven to 10 days. The clinical improvement is dramatic and recovery has been uneventful in all forms of tularemia treated.

Bacteriemia and infections of the urinary tract due to *Escherichia coli* also have responded satisfactorily to streptomycin. There have been some failures in this group.

Satisfactory results have been obtained in the treatment of influenza meningitis with streptomycin; however, in the severe cases treatment with streptomycin should be combined with sulfonamide therapy and probably also with serum therapy.

Use of this antibiotic has been found of value in the treatment of Friedlander's pneumoniae and it also appears helpful in the treatment of ozena.

Although streptomycin for the most part is effective against gram-negative organisms, a few strains of *Staphylococcus aureus*, a gram-positive organism, also are sensitive to streptomycin. Recoveries from staphylococcal bacteriemia have followed the use of streptomycin when the organisms were resistant to penicillin.

From the studies on animals reported to date, it is reasonable to assume that streptomycin should prove of value in the treatment of plague.

Wenner<sup>3</sup> calls attention to the fact that a number of toxic reactions have been noted following parenteral injection of streptomycin. Two instances have been reported of loss of consciousness following rapid intravenous injection. Recovery occurred in a few minutes. Thrombophlebitis may occur. There may be generalized aches and pains in the joints. Fatty metamorphoses in parenchymal cells of the liver and the tubular epithelium of kidneys have been seen in experimental animals. Eighth nerve deafness has occurred also. When the dosage in adults is kept under 1.0 Gm. daily, few reactions occur.

1. C. S. Keefer, in *Jl. Lancet*, Feb.; *Chicago Med. Soc. Bul.*, Feb. 22nd.

2. W. E. Herrell, Rochester, Minn., in *Jl. Kansas Med. Soc.*, June.

3. H. A. Wenner, Kansas City, Kansas, in *Jl. Kansas Med. Soc.*, June.

# OPHTHALMOLOGY

C. B. FOSTER, M.D., *Editor*, Charlotte, N. C.

## TYPES OF RETINOSCOPY

THERE ARE, in general, two methods of retinoscopy, namely, static and dynamic. The static is divided into two classes: cycloplegic and non-cycloplegic. The dynamic has no subdivisions and is treated as one subject.

Two other names frequently confuse the nomenclature; streak retinoscopy, and cylinder retinoscopy. They are really refinements of technique, and are used with either static or dynamic methods. So they do not properly add to the classification of retinoscopy and will be discussed at the end of the article.

### STATIC RETINOSCOPY WITH CYCLOPLEGIC

As previously stated under retinoscopy, in this section, the distance of the observer from the patient is immaterial. Some use an observation distance of one meter; others find two-thirds of a meter more convenient. By using appropriate lenses in the trial frame, the anterior conjugate focus is established at the distance elected.

The fixation point for the patient may either be past the observer's head, at a six-meter distance, or it may be at the same distance as the observation point, on the mirror or in the light of the mirror. With accommodation paralyzed, there will be no difference in our results whichever fixation distance is chosen.

In using a six-meter fixation distance, the observer and patient are seated facing each other, the above mentioned interval separating them, heads at approximately the same level, and in line with the fixation object (20/200 letters, or muscle light). The examiner holds the retinoscope before his right eye, to examine the patient's right eye, moving enough to his own left to enable the patient's left eye to sight the target chosen. He then proceeds with the measurement as described in a previous article. (Before beginning, the examiner could have, if he had wished, made an estimate of the lenses required to produce an anterior conjugate focus at the chosen distance, and have placed them in the trial frame.) When the measurement of the right eye has been completed, the examiner moves to his right, and uses the retinoscope before his left eye to obtain the calculations on the patient's left eye. The deduction of the dioptric value used to produce the conjugate focus at the selected interval is then made, and the result is the static cycloplegic refraction.

One might wonder if he were not defeating his purpose (which is to obtain the anterior conjugate focus, or to measure the refraction at an artificial far point, if you will), in employing a six-meter fixation point. The answer is no, because the fix-

ation distance has no bearing on the mechanism of retinoscopy. It is the rays returning or reflected from the patient's eye that we are capturing through the mirror hole, and we are doing it at the distance selected for our observations.

Most men prefer to have the fixation point in static retinoscopy with cycloplegia at, or about the retinoscope, to coincide with the observation distance. Some have the patient fix the retinoscopic light directly. If this be unpleasant, letters just off the side of the mirror on the head of the scope may be used. Some accuracy may be gained, in the latter case, by examining the patient's right eye with the right eye, and vice versa, using the letters on the same side of the retinoscope as the patient's eye that is being examined. Other operators make little distinction in the side of the mirror used, or in the eye of the examiner that is employed. The deduction again is for the observation distance, the result obtained being the static cycloplegic refraction.

### STATIC RETINOSCOPY WITHOUT CYCLOPLEGIC

Only one fixation distance is used. That is at six meters. The 20/200 letters are preferred to the light in order to prevent attention from wavering. The six-meter distance only is used in order to have at our disposal an eye in which the accommodation is not acting. (We use such a distance in all eye examinations as one that will not stimulate any degree of accommodation, and as one at which the light rays approach parallelism.)

The identical procedure just described for cycloplegic retinoscopy at this distance is carried out. The deduction for the distance of the anterior conjugate focus is made to obtain the static non-cycloplegic refraction.

As mentioned above, with the gaze at a point six meters away, the accommodation is inactive. The only exception is in eyes having a latent hypermetropia. It is only in these cases that any appreciable difference between a static retinoscopy without cycloplegia and a static retinoscopy with cycloplegic will be noted. Careful technique and skill in the method will reduce this difference to a workable amount. If one be a skillful retinoscopist and a careful refractionist, latent hypermetropia will not be found a stumbling-block. Otherwise it is better to use a cycloplegic.

### DYNAMIC RETINOSCOPY

As the name implies this is performed on the actively accommodating eyes of the patient, without cycloplegia. The accommodation is in full force. The fixation points are the letters on the sides of the retinoscopic head. (In other words, the observation and fixation distances are always the same, in dynamic retinoscopy.)

These observation points may be chosen as desired. Usually two distances are used, and two

different readings taken—one at a two-thirds-meter interval; the other at reading distance (one-third meter).

The technique of using the right eye for the patient's right eye, the left eye for the patient's left eye is exactly the same as described under cycloplegic retinoscopy with fixation at or about the retinoscope. The lenses used in the trial frame at the start of this procedure are those left on completion of the static non-cycloplegic retinoscopy, and without any deduction.

What deduction is made in dynamic retinoscopy? Quoting from Cowan: "Theoretically, whatever deduction is chosen for fixation, the point of reversal" (or neutrality, or measurement before described) "at this point will be the anterior conjugate focus for the accommodating eye, and the deduction for the fixation distance need only be made then for the static error; but this is not exactly the case in practice."

It is not the case, because we are not attempting to find the static refraction in dynamic retinoscopy. We are recording the negative relative accommodation, or to express it more simply, recording the relation of the accommodation to the convergence at that particular distance.

The method is of value in ascertaining the status of the accommodation at near points. Deductions are made, but they are in ratio to the convergence. One diopter of plus is usually deducted for each six prism diopters of exophoria (negative convergence) at that distance. Discussion of theories and applications are not in order here. The reader is referred to the works of Sheard, Tait and Maxwell. In general, however, it may be stated that the more plus accepted in dynamic retinoscopy, over that found in the static retinoscopy, the weaker is the accommodation. This idea may be applied to the point of measuring the total correction needed at reading distance, for presbyopes.

Cylinder retinoscopy simply is a method of accurately determining the axis of the correcting cylinder in all types of astigmatic eye. The principle followed is that of obliquely crossed cylinders. A new band of light definitely farther away from the true correcting axis is formed whenever the cylinder in the trial frame is moved slightly off its proper position. This new band is in the opposite direction, that the cylinder in the trial frame has been moved, from the true correcting axis, and is roughly four times as far away. For example, take a plus cylinder of approximately correct strength, correct axis at 90 degrees. Move it to 100 degrees. A new band will appear at 50 degrees. When the cylinder is replaced at 90, no second band is visible. It is because of the increased separation of second band from the true axis that cylinder retinoscopy is so useful in obtaining accuracy of cylindrical correction.

Streak retinoscopy takes its name from the fact that the mirror of the retinoscope is modified to reflect a streak of light instead of a circular bundle of rays. It is preferred by many refractionists to the conventional plane mirror because of alleged ease in defining the band in the reflex of the astigmatic eye.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., Editor, Chester, S. C.

### THE THERAPY OF HEMORRHAGE

AN ARTICLE by Ebert<sup>1</sup> which concisely covers this subject is reproduced in substance.

The shock associated with trauma is usually due to hemorrhage. The bleeding may occur externally, into the tissue, as in a fracture, or into the peritoneal and pleural cavities. Hemorrhage also presents a formidable problem when it occurs apart from trauma, e.g., hemorrhage from a gastric or duodenal ulcer. Ruptured ectopic pregnancy may present the picture of shock as a result of bleeding into the abdominal cavity. A characteristic finding in shock is *slowing of the pulse*, frequently as low as 40.

Severe hemorrhage is manifested by weakness, pallor, cold extremities, a feeble pulse, low arterial pressure and a *normal or rapid pulse rate*. The best criterion of the severity of shock is the arterial pressure—if it falls below 80 it is usually severe.

Therapy consists of restoration of the blood volume to normal and hemostasis. If control of the bleeding requires major surgery it is wise to replace the blood volume before anesthesia and operation. In the case of bleeding from a gastric or a duodenal ulcer surgical control of the bleeding is usually not indicated unless repeated hemorrhage occurs.

Plasma is extremely effective in the replacement of the blood volume following hemorrhage as is serum albumin. These substances are ideal for the treatment of shock resulting from plasma loss, as in burns. The recently noted high incidence of homologous serum jaundice following the use of pooled plasma has lessened the enthusiasm for its use.

The perfect fluid for replacement of blood volume is whole blood. Blood drawn into citrate solution should not be used after one week of storage as the cells will survive only a short time in the circulation of the recipient. If glucose is added to the citrated blood so that the final concentration is 0.6 per cent, the blood may be stored two or three weeks. One of the difficulties in using a glucose citrate mixture for a diluent is that the glucose will caramelize if the mixture is autoclav-

1. R. V. Ebert, Minneapolis, in *Jl-Lancet*, April.

ed. Recently a mixture composed of sodium citrate, citric acid and glucose has been advocated. This can be autoclaved as a mixture and gives excellent cell survival time after storage for as long as four weeks. The provision of commercial transfusion equipment suitable for the storage of blood has rendered the establishment of a blood bank in the smallest hospital a simple matter.

Rh negative recipients should receive only Rh negative blood. Group O blood will occasionally lead to mild hemolytic reactions if given to recipients of other groups. If large quantities are used a more serious hemolysis of red cells may occur. The use of group O blood in emergencies for patients of all blood groups is permissible.

Reactions due to Rh incompatibility do not occur in men who have *not* had previous transfusions, or women who have *not* had previous transfusions or been pregnant. It is safe to give transfusions without Rh grouping of the recipient under these circumstances although the recipient may develop anti Rh agglutinins which could cause a reaction with subsequent transfusions. However, if the recipient has had previous transfusions, or especially if the patient is a woman who is pregnant or has had previous pregnancies, it is wise to use plasma until Rh grouping of the recipient can be completed.

Speed and the use of adequate quantities of blood are essential. Blood can be transfused into the femoral vein just below the inguinal ligament, even in the most severe shock. If the blood volume is to be returned to normal in severe shock 2,000 c.c. of blood must be used. If additional bleeding occurs during therapy, it is necessary to increase this amount. If the transfusion is running slowly, adequate speed can be attained by attaching a sphygmomanometer bulb to the air inlet and applying pressure. Caution must be exercised when the bottle empties to prevent air from entering the veins.

## SURGERY

WILLIAM H. PEBELAU, M.D., *Editor*, Charleston, S. C.

### ATYPICAL ACUTE APPENDICITIS

ACUTE APPENDICITIS still ranks high on the list of causes of death. It is very frequently a diagnostic problem. There is no short cut to the diagnosis. The atypical cases so vary in their onset, symptoms and physical findings that the possibility of acute appendicitis should be borne in mind whenever the physician is confronted by a puzzling diagnostic problem.

Thus Riese<sup>1</sup> introduces his discussion of the proneness of appendicitis to present itself in bizarre fashion.

<sup>1</sup> J. A. Riese, Jr., City, in *Ill. Med. Soc. J.*, 1, 1946.

He reports cases to illustrate his theme.

A patient, four months pregnant, had severe pain in the right flank and over the right loin. The attack had begun two days earlier with diffuse upper epigastric pain and vomiting. Her obstetrician made a diagnosis of "gastrointestinal upset." The vomiting continued all the following day, and the pain gradually moved to the right kidney area, with radiation to the right groin. There was increased frequency of urination, no tenderness or rigidity in the right lower quadrant, rectal examination negative, white cells 18,000—90% pmns. Urine was negative. A film of the abdomen taken in the upright position showed no evidence of air under the diaphragm, no signs of intestinal obstruction or of renal calculus. Barium enema revealed a high retrocecal appendix pointing toward the right kidney area, the area of maximum tenderness. A diagnosis of acute appendicitis was made. The surgeon refused to operate until after consultation with a genitourinary surgeon. Twenty-four hours after admission to the hospital patient was operated upon with the surgeon still in doubt as to the diagnosis. The appendix was found to be inflamed and gangrenous.

A woman with a three-day history of epigastric pain, nausea and vomiting had tenderness in the right lower quadrant without rigidity; t. normal to 99; whites 9,000—80% pmns. She was fairly comfortable and eating regularly and well. At operation, the surgeon found a ruptured appendix, with beginning localization of inflammation. Uneventful recovery.

A patient ill for five days with pain and cramps in the lower abdomen attended a dance the evening before, and had to leave early because of nausea. She was lying comfortably in bed, t. 99½, tenderness over the right lower quadrant, but no rigidity, whites 15,000—88% pmns. Rectal examination—tenderness of the cecal area. Operation same day—perforated appendix with abscess formation, localized. The appendix was removed. Uneventful recovery, t. normal in 48 hours.

This patient, the mother of three. After the appendectomy on her daughter developed severe pain in right lower quadrant, requiring narcotics and sedation; no fever; blood count and urine normal. A complete x-ray examination of the gastrointestinal tract was made and an intravenous pyelogram done—all negative. The right lower quadrant pain continued to recur. After observation for one month, and at the patient's insistence, the appendix was removed. The appendix was six inches in length and not diseased.

These three patients were well-known to each other. It is well to note the difference between each of them. Patient number four has had no recur-

rence of her abdominal pains since the operation, and it is difficult to explain her symptoms except on the basis of a neurosis.

A 41-year-old man was suddenly stricken with weakness and cold sweat, followed by epigastric pain, sharp enough to "double him up," cramp-like, continued to come and go during the day and remained general over the abdomen. No tenderness, no rigidity, b. p. 120/80, t. normal. The physician who first saw him thought it a coronary attack: ecgm. negative. The patient was given a sedative, and remained in bed. Next day, mild cramp-like pains at infrequent intervals, pain general throughout the abdomen. He developed diarrhea, subsiding as the day wore on. On the next day cramp-like pain occasionally: t. 100; whites 19,000—82% pmns. T. remained at 100 for 24 hours, pain infrequent and general over the abdomen. Now rigidity was noted and in the right lower quadrant. On very deep pressure a tender mass the size of a grape was thought to be felt; on rectal examination a tender fullness was felt above the prostate. A surgeon of wide experience was doubtful of the diagnosis. Operation disclosed acute suppurative appendicitis.

This patient had had two previous attacks with similar onset, clearing in 24 to 48 hours. A gastrointestinal series of x-rays showed a retrocecal appendix. In this case, onset was such as to cause the first physician to make a diagnosis of coronary disease. Thereafter little evidence pointing to appendicitis was found for several days and only with some localization of a suppurating appendix. Finally (and only after the author's insistence) the surgeon agreed to operate. In my files on this case I have a letter of doubt as to the preoperative findings by a surgeon of international repute. To his surprise, he found a ruptured localized appendix.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### PRESENT-DAY TREATMENT OF DIABETES IN THE PREVENTION OF DEGENERATIVE COMPLICATIONS

WE need to be constantly reminded of the essentials of management of diabetes. Marble<sup>1</sup> gives such essentials.

Treatment today consists in supplying a diet calling for 160 to 200 grams of carbohydrate a day with some 225 or even 250 grams for children. Protein allowances are set at three-fourths to 1½ grams per kilogram body weight for adults and up to two to four for young, growing children. The fat content of the diet is set at that level necessary to

1. Alexander Marble, Boston, in *Jl. Ark. Med. Soc.*, Aug.

maintain proper weight for height and age and with adult patients ranges from 60 to 120 grams daily. The diet should provide entirely adequate amounts of vitamins, minerals, bulk and roughage.

If, on a diet necessary for normal weight and strength, the urine is not sugar-free or the blood sugar is not at a satisfactory level, then a single dose of protamine zinc insulin daily before breakfast is prescribed and adjusted to provide a satisfactory blood sugar level and a sugar-free urine. If, on such a regimen, the urine during the course of the day shows appreciable amounts of sugar, then crystalline or regular insulin is given also before breakfast in dose to provide before the noon meal a satisfactory blood sugar and a urine free or nearly free of sugar. If during the afternoon or evening undesirable amounts of sugar are excreted, then shifting of food from the latter to the first part of the day is indicated. All patients on protamine zinc insulin receive a bedtime lunch of 10 to 15 grams of ch. and often a similar mid-morning lunch as a protection against insulin reactions.

With only partial control of diabetes, the degenerative complications, chiefly arteriosclerotic, affecting particularly the eyes, heart, kidneys, and peripheral vessels, become evident only after 10, 15, or 20 years of diabetes. The incidence of recognizable arteriosclerosis among patients with onset of diabetes at 15.0 years of age or under, and surviving after 20 years of the disease, may reach as high as 70 per cent. Available evidence indicates that by careful, continuous control of diabetes arteriosclerosis may be postponed.

Careful treatment consists of preventing glycosuria and significant hyperglycemia in so far as practicable by means of a) a restricted diet, adequate in all essentials, so designed as to provide normal weight and strength and to avoid obesity; b) insulin, if necessary, in adequate amounts daily, protamine zinc insulin alone, or in combination with regular or crystalline insulin; c) regular physical activity suited to the individual; and d) education of patients in all features of home management.

### EXTERNAL RUPTURE OF AORTIC ANEURYSM

(S. M. Vaughan, in *Jl. Tenn. Med. Assn.*, June)

A colored woman, 38, first seen March, 1946, had an eroding aneurysm visible just below the sternoclavicular junction, right, the size of an almond. She first noticed the swelling after receiving a venous injection ("for bad blood") six months before. I recommended a course of bismuth injections only. She went to another physician and received 10 "arm and hip" injections. When she came back in July the aneurysm was three times the former size. I gave her 20 injections of bismuth, advised no work, and warned that the life expectancy was six months.

Seen once a month thereafter aneurysm steadily increased. Early in January a small hemorrhagic area appeared off center of the aneurysm, which by now was three inches in diameter at the base and protruded to the level of her chin.

On January 14th, there was breakdown of the hemorrhagic area, with a slow ooze of thick sanguinous matter into the aneurysm. A cotton compress was kept in place with adhesive strapping and she was put on sedatives. Patient died at end of a week. Examination of the cavity showed the size of a silver dollar, with complete destruction of the sternal attachment of the first rib and slight erosion of the clavicular junction and the lateral edge of the sternum.

## PROCTOLOGY

RUSSELL BUXTON, M.D., Editor, Newport News, Va.

### A LESS PAINFUL HEMORRHOIDECTOMY

OPERATIVE treatment of piles has been improved greatly since the days of the clamp-and-cautery and the rubber-tube "whistle."

Clardy<sup>1</sup> is brief, to-the-point and convincing. Indications for surgery in the treatment of hemorrhoids are—bleeding, pain and prolapse. A great many hemorrhoids are symptomless. In such cases surgery is not urgent.

The best treatment is the simple dissection of these masses of vessels only, ligation with a small calibre-transfixed suture, and excision.

The anesthetic of choice is 40 c.c. of 1½% metacaine in the caudal canal.

The patient is placed on the abdomen, the table broken in its middle and the buttocks strapped apart with adhesive. This is a comfortable position to patient and surgeon. The operative field is more accessible.

The hemorrhoid is grasped at the top with one, and at the lower end with another, Allis forceps; mucous membrane and skin is incised on both sides at a point near the free border, and peeled down toward the base with the sharp knife blade. The two forceps will be left holding the mass of tortuous veins and a small amount of mucous membrane and skin. The veins are dissected upward and freed from the mucous membrane at the apex. The veins and artery are ligated high with a small transfixed catgut suture. Be sure of the latter because the artery retracts, and if it should bleed, it can be quite troublesome. Skin and mucous membrane in excess of the amount necessary to cover the raw areas are trimmed away and the operation is complete. No sutures, whistles or gauze packs!

The next morning there is no dough-like swelling around the anus; the patient has not had more than one hypodermic of morphine; he is comfortable and can void. At the end of the third post-operative day a finger should be inserted to flatten out the mucous membrane. At the end of a week or 10 days the wound will be healed without a change of the calibre of the anal canal; the patient will be happy and ever grateful.

1. D. M. Clardy, Hopkinsville, in *Ky. Med. J.*, Aug.

## PEDIATRICS

### ACNE VULGARIS IN ADOLESCENCE

AS TO ACNE VULGARIS we still lack a satisfactory explanation as to the cause and a generally satisfactory treatment. Hazel<sup>1</sup> recognizes this to be true but goes on to describe measures which have given best results in the great majority of cases.

A good many dermatologists of large experience believe that an increased fat intake produces a pustular lipoidosis of the skin and that a low-fat diet and thyroid extract constitute the chief feature of successful acne treatment.

For the associated seborrhea of the scalp with pruritis a shampoo once a week with any bland soap or Packer's tar soap, followed with a vinegar rinse, may be sufficient; if seborrhea is severe, a tar-sulphur-salicylic acid in a water-soluble base, massaged into the scalp with the finger tips the night before shampoo. The following procedure succeeds well in many cases: The patient is instructed to wash the face with warm water for two or three minutes and then to pour a half teaspoonful of a detergent oil in one palm, rub the palms together, and then rub the face well for one minute; then rinse first with warm water and then with cold water—all this is done morning and night.

The careful removal of comedones with a Schamberg comedone extractor is needed in many cases. The pustules may need to be incised with a sharp, sterile knife, the contents evacuated with gentle pressure and the bleeding controlled by hot compresses or towels. At first the interval is one week, later two weeks, later once a month.

There is no particular evidence of vitamin-A deficiency in patients with acne but its use, in 100,000 unit doses at bedtime, has been so helpful in managing acne in adolescence that the author prescribes it routinely. This therapy should be maintained for at least a year after all evidence of acne has disappeared.

There are severe cases of acne which will not respond to mild measures. In these cases x-ray seems indicated. There is a mistaken idea among the parents of acne patients that x-ray scars the skin.

1. O. G. Hazel, Oklahoma City, in *Jl. Okla. Med. Assn.*, Aug.

IMPROVEMENTS IN ANESTHESIA constitute the most important single factor in the recent rapid development of thoracic surgery in general and the attack on lung cancer in particular. Improvements in blood transfusion are important. The frequency of local recurrence after removal of cancer shows the need, in many cases, for more extensive, even mutilating operations.—Hougensen.

PENICILLIN CURE OF GONOCOCCIC ENDOCARDITIS of the pulmonary valve is reported by Myers, in *Jl. A. M. A.*, April 19th.

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## LET US BE MODEST IN OUR HOPES

IN THE UNITED STATES cancer accounts for one out of every eight deaths; one in four deaths among women between 45 and 55. These facts are known to all doctors of medicine, and surely this knowledge makes every one of us eager to follow any lead which holds out any reasonable promise of reducing the cancer death rate.

Cutler<sup>1</sup> cites these figures as a preliminary to warning against expecting miraculous results from the expenditure by the agencies, governmental and otherwise, of enormous sums of money for solving the cancer problem, and prevention of cancer morbidity and mortality.

This profound scholar knows as much as any one about the special subject of cancer; and he has a wide and deep knowledge of things in general, including the operations of the human kind. He does not believe in miracles. He goes on to expose the futility of expecting cancer to be done away with by the spending of all this money.

He tells us:

Two billion dollars went into construction of the atomic bomb and the question naturally arises, What stands in the way of attacking the cancer problem in the same manner? The difficulty lies in the fact that in cancer we deal with cells, the units of life, whereas *atoms* are the units of *matter*. The biologists do not yet understand life as the physicists understand matter. Furthermore, the physicists had considerable knowledge about the *atom* before they started; we know very little about the *cell* except that it is infinitely more complex.

Another great authority on cancer<sup>2</sup> is likewise skeptical:

At this time, when mass psychology is geared to the belief that any problem of science can readily be solved if enough money and brains are thrown into the project, the solution of the riddle of cancer seems painfully slow and laggard.

Cutler again:

A recent study of this question indicates that if every patient suffering from cancer in the United States could be given the benefit of the most modern and skilled methods of treatment, the increased curability over present conditions would result in a saving of at least 50,000 lives annually. The perfecting of service to the cancer patient demands a personnel of great experience, a costly equipment and a perfect organization; it is therefore evident that such establishments for the treatment of cancer cannot be multiplied rapidly. Thus, the efforts of organization of this branch of medicine should be indicated by the *quality* of the institutions and not by their *number*.

1. Dedication Address, Athens General Hospital, by Max Cutler, Chicago, in *U. Med. Assn. Ga.*, Aug.

2. F. E. Adair, Cornell Univ. Med. Col., in *Bul. N. Y. Acad. of Med.*, July.

A patient with cancer of the skin, lip or early cancer of the mouth has an excellent chance of cure. Cancer of the throat, formerly 100 per cent fatal, now yields 50 to 90 per cent cures, in most cases without operation; and cancer of the cervix, formerly requiring a formidable operation, is now curable in a high proportion of cases without operation, with almost no mortality. These are some of the wonders of x-rays and radium.

Research projects of elaborate organizations should be supported in the reasonable hope that adequate funds, equipment and trained personnel in a cooperative effort will result in important contributions. However, a real danger lurks in this direction.

Cutler asks seriously the question whether the complications inherent in size and superorganization do not sometimes defeat the very purpose for which a project is founded. He asks that we not overlook the potentialities of the isolated but inspired scientist struggling in the corner of a laboratory under the most modest conditions with wholly inadequate facilities. One need only scan the pages of medical history and review the primitive and modest circumstances surrounding the discoveries of a Jenner, a Pasteur, and a Curie to be impressed with this significant fact. One may well even ask what role did the obstacles and almost insuperable difficulties play in the development of these supermen.

We all would do well to exert all the influence we have against any tendency which may be manifested to belittle what has already been learned, assuming that we are on an entirely wrong cause, and to strike out in a new direction guided by a belief in miracles in general and the miraculous powers of many dollars in particular.

## MANY MEANS OF PREVENTING CANCER LIE IN OUR POWER

### .. STAYING OUT OF THE SUN IN SUMMER FOR INSTANCE

EWING, certainly one of those most learned in the ways of cancer, went to great lengths to point out the deleterious effects of excessive doses of sunshine in the production of skin cancer. Adair,<sup>1</sup> who may be fairly called Ewing's successor, believes that sunburn in the young is not nearly so important as sunburn in those past middle age and in those who have aging skin.

Skin subjected to large amounts of actinic rays during the summer, Adair tells us, too frequently is presented to the doctor in the fall, covered with precancerous lesions, such as epithelial papillomata, verrucae, and pigmented nevi. The case of a Columbia professor fond of sunshine in excessive

doses is cited. One winter he spent two weeks in Florida, where he carried out his annual sun ritual. On his return to New York, it was found that he had an acute cancer of almost the entire lower lip.

Further, the development of basal-cell cancers on the forehead, nose and lip is common in those golfers who spend hours in the sun bareheaded. Likewise among fishermen, even when they wear headcovering, but who get excessive actinic rays from the reflection of the sun on the water.

Adair goes so far as to say that anyone who has ever had even a single dose of low-voltage x-ray applied to the skin is a possible candidate for subsequent skin cancer; that atrophy of the oil glands and of the skin begins with the x-ray treatment and its resultant x-ray dermatitis; that of women who receive x-ray treatment for the removal of superfluous facial hair many develop cancers of the skin a number of years—as late as 20—subsequently, and some even after only one x-ray treatment; that x-rays or radium applied to human skin has far greater danger than is generally recognized even by the great majority of the medical profession.

### Other aspects of cancer prevention:

Every large skin burn which does not heal properly should be grafted. The prevention of cancer in burn scars is nearly 100 per cent possible if grafting is done at the correct time. Radiated lupus, if suspicious, should be grafted. With the development of arsenical dermatitis, excision of damaged areas and grafting are imperative, and this also applies to kraurosis vulvae.

Workers in gas service stations and oil plants present a new group of skin cancers, caused by neglect to scrub the tar, oil and gasoline from the dorsum of the hand, where they remain as irritating chemicals, frequently producing skin cancer.

Removal of thyroid adenoma leaves little opportunity for the subsequent development of a thyroid cancer.

The fibroadenomata of the breast, most apt to occur at from 13 to 18 years, it is well to remove.

Papilloma of the breast should be excised locally. In the woman from 20 to 35, it is common for premenstrual lumps to appear, then disappear after the period. Allow a reasonable time before suggesting removal of the lump. In the succeeding 10 to 15 years, one need not hesitate to remove the lump which is a localized area of mastitis.

The incidence of cancer of the cervix can be materially reduced by the mechanical repair of the lacerations and erosions; and by improvement of environmental conditions, such as by the practice of daily douches. Opportunities for the development of cancer of the cervix would be fewer if, instead of a supracervical hysterectomy for a fibroid uterus, a complete hysterectomy, including

1. F. E. Adair, Cornell Univ. Med. Col., in *Bul. N. Y. Acad. of Med.*, July.



the cervix were done. Study of the vaginal smear cells is a decided advance in the early diagnosis of cancer of the cervix, making possible the recognition of early lesions within the canal before they come within the realm of clinical observation.

Among those most familiar with the development of adenoma and carcinoma of the lung, there is growing a belief that the inhalation of smoke is playing an important role in the great increase of lung tumors. Ochsner of New Orleans is fond of demonstrating the parallel between the increase of cancer of the lung and the increase in the consumption of cigarettes. The lines are exactly parallel. And the air of our cities is filled with smoke dust, circulating dirt and burned gasoline fumes.

In recent years in a nearby city there was a chemical factory whose workers developed a very high incidence of bladder cancer. It was shown in the investigation that under the conditions in which the men worked they inhaled chemical fumes in large amounts; and these chemicals, which were excreted and recoverable in the urine, were the cause of the bladder cancer. Modern ventilation equipment was installed, with the resultant elimination of cancer of the bladder.

It is to the family doctor and cancer prevention clinics that we must chiefly look if we are to accomplish more in the prevention of cancer.

Here are suggested by one of the broadest training and largest experience many ways of reducing the chance that ourselves, members of our families, and our patients will die of cancer. May we all heed.

#### THE TREATMENT OF PRURITIS ANI

(C. C. Wilson, Kansas City, Mo., in *J. Mo. Med. Assn.*, Aug.)

The literature is full of good treatments, but when used, most of them prove ineffective.

Proper anal hygiene is good prophylactic treatment, and by washing the anus thoroughly after each bowel movement, the mild early cases clear up quickly.

Medical treatment is ineffective except for temporary relief.

Röntgen-ray treatment will give temporary relief for quite a long period, but the condition usually recurs as bad as before treatment.

The injection of anesthetic in oil is effective only as long as the anesthesia lasts—from five to 10 days.

The injection of alcohol has been the most popular treatment for several years and will produce a cure providing the patient gets a large enough slough of the perianal skin. It is painful and debilitating.

The object of all these treatments is to destroy the sensory nerve fibers. What better way of doing this than to simply cut the nerves and in such a way that they do not regenerate quickly? This is done by making radial incisions through the skin down to the mucocutaneous junction and packing the undercut surface with oxyel—an oxidized cellulose and a soluble gauze-like material which has some hemostatic properties and is absorbed in about a week.

Oxyel does not have to be removed; it controls the large ooze of blood, and keeps the nerve fibers separated for a period and the overlying skin healthy.

## NEWS

### THE TUMOR CLINIC AT JACKSONVILLE IN NOVEMBER

ALL DOCTORS OF THE SOUTHEAST INVITED

An educational seminar covering the entire field of malignant diseases will be held November 12th, 13th and 14th in the auditorium of the Roosevelt Hotel, Jacksonville, Florida. This seminar is under the auspices of the American Cancer Society, Florida Division, and is being staged by the Tumor Clinic of the Duval County Hospital, Jacksonville.

The prime purpose of this meeting is to make available to the physicians of the Southeast the latest knowledge in the diagnosis and management of malignant diseases. This is the first meeting of this nature to be held in this part of the country, and an open invitation is extended to all physicians who find it possible to attend.

The tentative roster of speakers and their subjects are as follows:

1. Tumors of the Female Genital Tract—Dr. Emil Novak, Johns Hopkins Hospital, Baltimore.
2. Tumors of the Gastrointestinal Tract—Dr. Samuel Marshall, Lahey Clinic, Boston.
3. Tumors of the Breast—Dr. Frank Adair, Memorial Hospital, New York City
4. Tumors of the Genito-urinary Tract — Dr. Archie Dean, Memorial Hospital, New York City
5. Lymphomas and Related Tumors—Dr. Lloyd Craver, Memorial Hospital, New York City
6. Mixed Tumors—Dr. George Pack, Memorial Hospital, New York City
7. Tumors of the Head and Neck—Dr. James Elliott Scarborough, Winship Clinic, Emory University Hospital, Atlanta
8. Tumors of the Chest—Dr. Oscar T. Clagett, Mayo Clinic, Rochester, Minnesota
9. Carcinoma Research—Dr. George Shimkin, National Cancer Institute, Bethesda, Maryland
10. Tumor Pathology — Dr. Fred Stewart, Memorial Hospital, New York City.

Since the entire field of malignant diseases will be covered during these three days, some parts of the program will surely be of interest to every practicing physician. It is hoped and urged that every physician in the vicinity will take advantage of this opportunity.

A final schedule of subjects and speakers will be published in the next issue of this journal. Details of the meeting may be obtained by writing—

Tumor Clinic of Duval County Hospital,  
2000 Jefferson Street, Jacksonville 6, Florida.

### AMERICAN COLLEGE OF ALLERGISTS GRADUATE COURSE IN ALLERGY

This course will be given November 3rd-8th, under the auspices of the College of Medicine of the University of Cincinnati by two-score physicians and scientists from medical centers and colleges in the United States and Canada.

The program covers the physiology, immunology and pathology; special allergies such as mold, food, bacterial and physical; pharmacology of drugs used in the treatment of allergy; preparation of allergenic extracts; techniques of skin-testing; and the determination of allergic history.

This course is arranged with a view to the needs of allergists, other specialists, and general practitioners.

Almay, Inc., New York, and Marcelles, Inc., Chicago, respectively, have made available two and three scholar-

ships. Five additional scholarships have also been made available through a Cincinnati friend. These scholarships are intended for those students, interns and residences who are particularly interested in allergy.

Early registration is urged because the number of students may have to be limited to the facilities of the hotels and the Medical College.

Make all reservations for the course and hotel accommodations directly with the secretary, Dr. Fred W. Wittich, 423 LaSalle Medical Building, Minneapolis, Minnesota.

**THE U. S. HOSPITAL PROGRAM.** The Hospital Survey and Construction Act, which became law in August, 1946, has launched a comprehensive program for the construction of hospitals and health facilities. To help communities realize the benefits of this legislation, the U. S. Public Health Service has just issued a series of five pamphlets.

"The Hospital Survey and Construction Act" is a summary of the law and regulations. "Why We Need More Hospitals" gives the story of hospital needs in this country. "The Hospital Act and Your Community" tells in simple terms what the program means to states and communities. "Hospital Quiz" is a series of questions and answers on hospital planning. "What is a Hospital System?" describes a coordinated hospital system, intended to extend the scope of hospital care. Sample copies of these pamphlets are available free on request to the U. S. Public Health Service, Washington 25, D. C.

#### ANNOUNCEMENT OF VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association which will be held in Toronto, Canada, May 6th-8th, 1948, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed 3,000 words in length; must be presented in English; and a typewritten double-spaced copy sent to the corresponding secretary, Dr. T. C. Davison, 207 Doctors Building, Atlanta 3, Georgia, not later than February 1st, 1948. The committee who will review the manuscripts is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any Journal selected by the author.

#### DR. I. C. EAST ASSUMES POST AT EASTERN STATE (VA.) HOSPITAL

Dr. Joseph E. Barret, State Commissioner of Mental Hygiene and Hospitals, announces that Dr. Isaac C. East has assumed his duties as clinical director at Eastern State Hospital at Williamsburg.

Dr. East, 41, a native of Mississippi, received his pre-medical college education at Oxford, Miss., and the University of Mississippi, and obtained his doctorate in medicine from the University of Arkansas School of Medicine in 1931. Following this he served an internship at Grady Memorial Hospital, Atlanta.

Since 1932, Dr. East has been with the department of institutions of New Jersey in various psychiatric capacities. Also, from 1938-1941, he was visiting physician to the New

York Post Graduate Hospital, devoting special attention to psychosomatic conditions.

During World War II he served as plans and training officer of the 89th General Hospital. Later he served on the psychiatric staff of the Oliver General Hospital, Augusta, Ga., and the Regional Hospital, Fort McClellan, Va.

His last year in the Army was spent in the Pacific area where he was Staff Psychiatrist of the headquarters replacement and training command of the Middle Pacific Area.

#### DUKE UNIVERSITY SCHOOL OF MEDICINE

Dr. William A. Perlzweig has received three months leave from his duties as Professor of Biochemistry. He will visit Palestine and act as a special advisor to the Hebrew University and the Hadassah Medical Organization in the proposed establishment of a medical school in the University at Jerusalem.

Miss Mary C. Singleton, of the Duke Hospital division of physical therapy, has been elected chairman of the House of Delegates of the American Physical Therapy Association. Miss Singleton has been a member of the association since 1934 and has previously served as president of the Carolina chapter and as vice-chairman of the House of Delegates.

Dr. William W. Hurteau, Davenport, Iowa, has been appointed as an instructor in the Department of Pathology. Following graduation from the University of Iowa School of Medicine in 1937 he completed an internship and assistant residency in medicine and neuropathology at the Montreal General Hospital; two years of pathology at the Army Institute of Pathology, in neuropathology; a fellowship in neuropathology with Dr. Walter Freeman at the George Washington University School of Medicine; an administrative service with the Third and Ninth Armies; and service in pathology at the Brooks General Hospital, Fort Sam Houston, Texas.

A portrait of Dr. W. C. Davison, Dean of the Medical School, has recently been finished by the artist Wayman Adams. This is a gift of the medical alumni and will be presented to the school at the annual fall symposium which will be held on October 17th and 18th.

#### CATAWBA VALLEY (N. C.) MEDICAL SOCIETY

Dr. Glenn R. Fry was chosen president, and Dr. Dan N. Stewart, secretary-treasurer, of the Catawba Valley Medical Society, at a meeting held August 20th. Both doctors practice at Hickory.

#### DIED

Dr. Tiffany Johns Williams, Professor of Obstetrics and Gynecology at the University of Virginia, died August 19th at the University Hospital following a heart attack three days before at his home.

Dr. Williams was educated at Johns Hopkins University where he received his A.B. degree in 1919, and his M.D. degree four years later.

He began his medical career in 1923 as house officer in obstetrics at the Johns Hopkins Hospital. He served an internship at the Sloan Hospital, New York City, and was obstetrician and gynecologist at the Yale Medical School, 1925-26; at the University of Iowa, 1926-29, and at the Great Falls Clinic, Great Falls, Mont., 1929-31. He went to the University of Virginia in the Fall of 1931.

Dr. Fairley Patterson James, 56, died August 23rd, at his home at Laurinburg, N. C., of a heart attack. Dr. James obtained his medical degree from the University of Pennsylvania, and had practiced in his home town and county throughout his professional life. At his death he was the chief-of-staff of the Scotland County Hospital.

## BOOKS

**THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY**—A complete dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc.; with Pronunciation, Derivation and Definition, by W. A. NEWMAN DORLAND, A.M., M.D., F.A.C.S., Lieut.-Col., M.R.C., U. S. Army; Member Committee on Nomenclature and Classification of Diseases of the A. M. A.; Editor of "American Pocket Medical Dictionary." 21st Edition. 1660 pages; with 880 illustrations, including 233 portraits. With the Collaboration of E. C. L. MILLER, M.D., Medical College of Virginia. W. B. Saunders Company, Philadelphia and London. 1947. Price—\$8 without thumb index; \$8.50 with the thumb index.

In no interval between any two successive editions of this great dictionary have so many new terms been added to the language of medicine and surgery, as in the interval between the 20th and 21st editions. To say that the present edition maintains its own record for including all the terms introduced during the last interval, as it has in all previous intervals, we pay it the highest praise possible.

Without such a dictionary no one can read understandingly the medical literature of today.

**TREATMENT OF THE PATIENT PAST FIFTY.** by ERNEST P. BOAS, M.D., Associate Physician, Mount Sinai Hospital, New York City; Assistant Clinical Professor of Medicine, Columbia University. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago. 1947. \$5.75.

The author holds that disease in the aged is not a part of the aging process, but that it always represents a pathological condition. Whether or not we find ourselves in agreement with this opinion, a) of us realize that some of the conditions we as physicians are called upon to advise the elderly about are the result of physiologic aging, and some others to a combination of this and disease processes *per se*.

The author well says that many of the mental and emotional changes manifested by elderly persons are due less to aging and regression of their mental faculties than to the kind of life that is forced upon them. He advocates periodic examinations designed to discover abnormalities of function and structure at their first appearance and in their early stages. He says that the aging body needs less protein and is less able to assimilate an excess of protein. He is disposed to pay much regard to the food preferences, and it is encouraging to see the statement that condiments may be allowed freely unless some specific disease condition contraindicates their use. His attitude toward tea and coffee, alcohol, tobacco, rest and exercise is based on the same common-sense principle.

Every doctor who has the care of elderly persons will do well to use this book freely—to the great good of these elderly patients.

**SURGERY OF THE AMBULATORY PATIENT**, by L. KRAEER FERGUSON, A.B., M.D., F.A.C.S., Professor of Surgery, Graduate School of the University of Pennsylvania; Professor of Surgery, Woman's Medical College of Pennsylvania; with a section on fractures by LOUIS KAPLAN, A.B., M.D., F.A.C.S., Associate in Surgery, University of Pennsylvania. Second edition, 643 illustrations. J. B. Lippincott Co., E. Washington Sq., Philadelphia 5. 1947. \$10.

The author tells us that in writing this book it was his purpose to provide a volume which would be of value to younger men and practitioners who treat surgical lesions that do not necessitate hospital care. This is certainly a worthy ambition well expressed. Apparently only the younger men and the general practitioners believe that there is such a thing as a surgical lesion that does not necessitate hospital care. However trifling the surgical procedure indicated, it is so much easier to send the patient in the hospital, and then, when notified that all is in readiness in the operating room, go out and do the trick.

The author surveys the field of ambulatory surgery, lists the equipment for such surgery; discusses the anesthesia, preparation for and conduct of the operation, the postoperative care, specific surgical lesions, open wounds, burns and frost bites, foreign bodies, superficial cysts and tumors.

Part II is devoted to regional surgery—of the scalp; face, nose, ear and eye; of the mouth and salivary glands; and so on to the different regions and members. Part III describes the ambulatory surgery of the musculoskeletal system.

It is truly astonishing and gratifying to look over this book and see how much of surgery this first-class surgeon says can be properly done on ambulatory patients.

**INTERNAL MEDICINE IN GENERAL PRACTICE**, by ROBERT PRATT MCCOMES, B.S., M.D., F.A.C.P., Assistant Professor of Medicine and Director of Post Graduate Teaching, Tufts College Medical School; Senior Attending Physician, The Joseph H. Pratt Diagnostic Hospital; Diplomate of the American Board of Internal Medicine. Second Edition. 731 pages with 122 illustrations. W. B. Saunders Company, Philadelphia and London. 1947. \$8.

The author emphasizes basic principles on which there is general agreement and pays little attention to controversial matters. Discussion of diseases rare in the United States and descriptions of procedures which lie solely within the province of specialists are given scant consideration. In this way the author has been able to cover well this broad field in a small volume.

Special emphasis has been placed on diseases in which errors in diagnosis and therapy are made with comparative frequency.

A chapter on psychiatric disorders has been added to the present edition, and one on essentials of the common vascular disorders of the extremities. The great advances in therapy are recorded mi-

nately, and comparative efficacy evaluated.

The practitioner seeking a guide through the maze of confusingly disparate opinions as to many problems of medical practice will not be disappointed in this book.

**SYMPTOMS AND SIGNS IN CLINICAL MEDICINE:** An Introduction to Medical Diagnosis, by E. NOVELL CHAMPERLAIN, M.D., M.Sc., F. R.C.P., Lecturer in Medicine, University of Liverpool. 4th Edition with 346 illustrations, of which 19 are in color. *The Williams and Wilkins Co.*, Mt. Royal & Guilford Aves., Baltimore. 1947. 88.

There was perhaps never a time when it was so much in order to emphasize the importance in medicine of symptoms and signs. The great increase in the numbers of mechanical aids to diagnosis continues to favor the neglect of the older, and still the most important, means of arriving at a diagnosis on which to base successful treatment.

The first issue of this book came out a dozen years ago. The succeeding issues have corrected any deficiencies of the earlier and kept up with the advances made possible by improvements in knowledge of pathology and in special methods of examination.

**FUNDAMENTALS OF PSYCHIATRY,** by EDWARD S. STRECKER, M.D., Sc.D., LL.D., Litt. D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergraduate and Graduate Schools of Medicine, University of Pennsylvania. Fourth edition. 21 illustrations. *J. B. Lippincott Co.*, E. Washington Sq., Philadelphia 5. 1947. 84.

It is a pleasure to welcome a new edition of this excellent work. Strecker long ago realized that the practitioner should manage the vast majority of the psychiatric ills of his own patients, and wrote a book to help him in this management. The present edition, carefully studied, will keep the practitioner competent in this field.

**MASSAGE AND REMEDIAL EXERCISES IN MEDICAL AND SURGICAL CONDITIONS,** by NOEL M. TINY, Member of the Chartered Society of Physiotherapy. Seventh edition. *The Williams and Wilkins Company*, Mt. Royal & Guilford Aves., Baltimore. 1947. 86.

This book was conceived of as a means of meeting the needs of senior students for a textbook on massage and exercises. Little attempt is made to describe special manipulations. The aim has been to provide most details where other textbooks provided least.

This plan has been followed all through to this edition, for which only slight alterations have been made.

There are sections covering fractures, dislocations and sprains; diseases of joints, synovial membranes and bones; diseases of the nervous system, central and peripheral; functional nervous diseases; deformities; constitutional diseases; dis-

eases of the circulatory system, including the blood; diseases of the respiratory organs; and abdominal and pelvic conditions.

An excellent index adds greatly to the usefulness of the volume.

**THE TREATMENT OF PEPTIC ULCER, WITH SPECIAL REFERENCE TO VAGOTOMY**  
(J. M. Ruffin, Durham, in *Trans. & Studies of College of Phys. & Philadelph.*, April.)

In 1944, vagotomy for the treatment of peptic ulcer was introduced at Duke Hospital by Dr. Grimson. Sixty-five patients who have had a transthoracic vagotomy for the treatment of their ulcer constitute the basis of this report.

The most striking effect of vagotomy is the immediate and complete relief of ulcer pain which was noted in every patient in this series. One patient had a hemorrhage several weeks after vagotomy, but his blood picture was not materially affected and in a follow-up period of over one year he has had no further bleeding. The remaining 52 patients with a history of hemorrhage before operation have had no bleeding since. Some patients obtained fair results only because of distention, diarrhea, vomiting, weakness, nervousness, etc., and there was one post-operative death. Four patients in this series have probably had a recurrence of their ulcer.

Within recent months urecholine has been used successfully in combating this complications when there was no organic obstruction of the pylorus. This drug was first introduced by Machella, who showed that in the motionless, atonic post-vagotomy stomach the administration of urecholine produced large, effective peristaltic waves, which promptly emptied the stomach. In our experience urecholine by mouth is not effective, probably because of failure of absorption. However, 5 mcm. intramuscularly results in rapid emptying of the stomach within 20 to 30 minutes.

Trans thoracic vagotomy results in dramatic relief of pain in an overwhelming majority of patients having chronic intractable ulcer. The evidence suggests that it is due to decreased motility rather than to changes in gastric acidity. Recurrences have been observed in patients following vagotomy, and it is not yet known whether these were due to an incomplete severing of the vagus nerves or to some other factor. The most serious complication of vagotomy is gastric retention, and for this reason the procedure should never be performed in a patient who shows any evidence of retention, either clinical or by x-ray. Urecholine is an important drug in combatting this complication. Diarrhea and cardiospasm, while annoying, usually require no particular treatment.

It would seem that the brilliant results observed in many cases would justify its use in patients having marginal ulcer following gastric resection, in patients who have had frequent massive hemorrhages, and in those patients who either fail to recover or are unable to remain well under a carefully planned medical regimen. However, the procedure is still in the experimental stage and should not be performed unless the patient is to be followed carefully over a long period of time.

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Equipment, whether mercurial or aneroid, should be in good condition and calibrated for accuracy at yearly intervals, more often if defects are suspected.

The patient should be comfortably seated or lying with arms slightly flexed and entire forearm supported at heart level on a smooth surface. At least five minutes should be allowed for recovery from any recent exercise or excitement. There should be no constriction of the arm due to clothes or other objects.

The standard-sized cuff containing a rubber bag of 12-13 cm. in width should be used. The completely deflated cuff is applied snugly and evenly around the arm, with the lower edge an in. above the antecubital space, and with the rubber bag over the inner aspect of the arm. There should be no bulging or displacement on inflation of the cuff.

Palpation should always be used as a check on auscultatory readings. The stethoscope is placed over the previously palpated brachial artery in the antecubital space, not in contact with the cuff. No opening should exist between the lip of the stethoscope and the skin, but minimum pressure should be used. The hand may be pronated or supinated to obtain the clearest brachial pulse sounds.

The cuff is inflated rapidly to a pressure 30 mm. above the level at which the radial pulse can be palpated, then deflated 2 to 3 mm. per second. The level at which the first sound regularly appears should be considered the systolic pressure, unless the palpatory level is higher, in which case the latter is accepted.

With continued deflation of the cuff, the point at which the pulse sounds suddenly become dull and muffled represents the diastolic pressure. If this differs from the level at which the sounds completely disappear, the latter reading also is recorded as a diastolic pressure. This is then written: RT (or LT) 140/80-70 or 140/70-0. If the two levels are identical record as follows: 140/70-70. The cuff should be completely deflated before any further determinations are made.

A study by life insurance directors and actuaries indicates that levels of blood pressure above 140/90, at any age, are presumably pathologic, and that the actual mortality exceeds the expected mortality in rapidly rising ratios for systolic and diastolic readings above this level.

Some observers believe the levels generally accepted as indicative of hypertension to be too low; that relatively high blood pressures may not be physiologic in certain individuals; that the determining point which distinguishes a normal relatively high blood pressure from essential hypertension, is that such high "normal" blood pressures do not increase with time, whereas in the pathologic hypertensive condition they tend to rise from year to year until very high levels are reached.

Review of the records of 1,500 patients whose blood pressures were determined 10 to 20 years after an original reading, showed that excessive variability, or excessive response to stimulation, of unusually normal blood pressure should be considered as evidence of a prehypertensive state, which may be a precursor of sustained hypertension. When the diastolic reading was less than 85 mm. at the time of the first reading, the incidence of subsequent hypertension was small. When both the systolic and the diastolic readings were elevated, the incidence of subsequent hypertension was very great. Even when the systolic pressure was less than 140 if the diastolic blood pressure was more than 85, the incidence of subsequent hypertension was high. Patients who originally had systolic blood pressure of more than 140, but diastolic blood pressure of less than 85, showed no subsequent hypertension.

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## The Modern Treatment of Cirrhosis of the Liver\*

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**P**RIOR TO THE last decade the treatment of cirrhosis of the liver was largely symptomatic. A high carbohydrate diet was sometimes utilized on the grounds that carbohydrates exerted a sparing action upon the liver. Since alcohol was thought to be an important etiologic factor, the victim of cirrhosis was urged to become a total abstainer. Diuretics and paracentesis were employed as indicated for relief of ascites, and at times the surgeon was called upon to perform an omentopexy. However, none of these measures was of more than temporary value, and the prognosis in cirrhosis, once ascites had developed, continued to be practically hopeless. Indeed, it was in the rarest of cases that ascites ever cleared up. Ratnoff and Patek<sup>1</sup> present an excellent discussion of the natural history of Laennec's cirrhosis of the liver in their analysis of 386 cases.

### ETIOLOGY OF CIRRHOSIS

The etiology of cirrhosis of the liver remains far from settled. In searching for factors that predispose to cirrhosis and thus may bear upon its etiology, Patek<sup>2</sup> found one glaringly prominent fact, namely, that *alcoholism* is the most common ante-

cedent factor in this disease in the Western Hemisphere. Yet in about 30 per cent of cases seen at autopsy, there had been no story of alcoholism. Furthermore, when he examined the data on chronic alcoholism, he found that only a small proportion of the victims, variously estimated at from one to 25 per cent, develop Laennec's cirrhosis. It seemed probable that the association was intimate but not direct; that alcoholism *per se* did not cause cirrhosis of the liver. The fact that the disease occurs commonly in India, Java and Ceylon, where alcoholism is rare, would support this interpretation. Moreover, there would seem to be incontrovertible evidence that cirrhosis may follow severe toxic hepatitis (e.g., from carbon tetrachloride or arsenical drugs) and so-called infective or epidemic hepatitis in nonalcoholic individuals.

Since alcoholic beriberi and pellagra had been shown to be similar to the endemic forms of these diseases, it seemed plausible to Patek that the correlation between alcoholism and cirrhosis of the liver might also be due to a coexisting *nutritional deficiency*. This hypothesis appeared particularly attractive in view of the high incidence of vitamin

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B-complex deficiency noted in patients with cirrhosis, as, for example, Wayburn and Guerard's<sup>3</sup> report of multiple peripheral neuropathy in 17 per cent of a large series of cirrhotic patients. The trouble with the severe alcoholic is that he forgets to eat; thus it seems fair to assume that many of the various morbid states to which an alcoholic is subject are primarily manifestations of vitamin deficiency. Although alcohol conceivably may exert toxic effects in the face of a poor diet, it must play a minor role at best, since all of the deficiency syndromes may develop in total abstainers on deficient diets.

An abundance of experimental evidence has accumulated attesting to the role of nutritional deficiency in the production of liver disease. In 1924, Aflán and his associates<sup>4</sup> reported that depancreatized dogs receiving adequate amounts of insulin and a diet of lean meat, sucrose and bone ash did not survive for longer than a few months. They also observed that failure of liver function due to fat infiltration of the liver found in such animals could be prevented by adding raw pancreas to the diet. These observations provided the necessary stimulus for a tremendous amount of research on lipotropic substances,<sup>5</sup> or substances preventing fat deposition in the liver, among them lecithin, "lipocaic," choline and inositol. MacLean and Best<sup>6</sup> in 1934 reported that fat was deposited in the liver of rats kept on a high-fat intake and this fatty deposition could be prevented by giving sufficient choline (now generally regarded as a member of the vitamin B-complex). Subsequently, Gyorgy and Goldblatt<sup>7</sup> produced fatty livers with necrosis in rats maintained on a diet deficient in the vitamin B-complex even though supplemented with thiamine, riboflavin and pyridoxine. The addition to the diet of yeast, a yeast extract, or 2 mg. of choline a day usually prevented the changes in the liver. Rich and Hamilton<sup>8</sup> succeeded in reproducing true cirrhosis of the liver in rabbits fed a deficient diet. The development of this experimental cirrhosis was not prevented by the addition of thiamine, riboflavin, pyridoxine, nicotinic acid or vitamins A, D and E to the basal diet, whereas a daily supplement of 5 gm. of dry brewer's yeast gave full protection. Rhoads and Miller<sup>9</sup> observed that the ability of the liver to excrete intravenously injected bilirubin was reduced in dogs when the animals were fed a diet lacking in the vitamin B<sub>2</sub> complex and that this function could be restored by the feeding of a normal diet or by the administration of crude liver extract. Many other studies indicate a protective action against hepatotoxins by the feeding of yeast, choline, methionine or high protein diets.

Interpretation of disease in man in the light of experimental work in animals must be made with

the utmost caution. However, certain clinical observations already mentioned suggest that *vitamin deficiency* may be an all-important etiologic factor in fatty liver and cirrhosis of the liver in human beings. Undoubtedly, clinical and experimental observations were of equal importance in giving impetus to the development of the modern treatment of cirrhosis by a nutritious diet high in calories, protein and vitamins. Before taking up the details of this dietary treatment of cirrhosis, it might be well to review briefly the symptomatology of the disease and the factors affecting the prognosis.

#### SYMPTOMATOLOGY AND PHYSICAL SIGNS

The most important symptoms of cirrhosis in Patek's large series were, in order of frequency, as follows: abdominal swelling, peripheral edema, weight loss, nausea and vomiting, abdominal pain and hematemesis. The most common initial symptoms and signs occurred in the following order: swollen abdomen, abdominal pain, hematemesis, edema of the legs, jaundice, nausea and vomiting, and weakness. Physical signs in the series of 386 patients were listed thus: ascites 78 per cent, palpable liver 75 per cent, jaundice 65 per cent, edema 61 per cent, palpable spleen 44 per cent, hemorrhoids 27 per cent, fever 24 per cent, collateral venous circulation 23 per cent, vascular spiders 15 per cent, and a number of other less specific manifestations, among them hemorrhagic phenomena.

#### CLINICAL COURSE AND PROGNOSIS

Ratnoff and Patek succeeded in following 245 of their series of 386 patients until their death; more than 60 per cent of these deaths occurred within one year of the first symptoms of the disease. An additional 117 patients were lost to follow-up, leaving only 24 patients known to be alive at the time the records were reviewed. Spontaneous loss of ascites occurred in only about seven per cent of the cases. After the onset of ascites 47 per cent of the patients survived six months, 32 per cent one year, and but 17 per cent survived for two years. Following the onset of jaundice (superimposed upon preëxisting cirrhosis) the survivorship curve was very similar to that following the onset of ascites. Of the 106 patients in the series who suffered from hematemesis, 40 per cent died within one month of the initial hematemesis, with an additional 30 per cent succumbing by the end of the first year. However, if a patient survived one year following hematemesis, he had a good chance of surviving several years longer.

The most common causes of death in cirrhosis, according to these same authors, are *liver failure* or *cholemia*, an ill-defined state in which the patient may become stuporous or delirious, finally sinking into coma (jaundice is usually but not invariably present); *hematemesis* from ruptured eso-

phageal or gastric varices; and *secondary infections*.

The prognosis following omentopexy, should the patient survive the initial postoperative period, was at first considered to be better than without treatment. Recent studies, however, indicate that although improvement may be noted in individual instances, the average prognosis for patients with cirrhosis is not appreciably changed by operative therapy. There were 34 postoperative deaths in Ratnoff and Patek's series, representing an operative mortality of 40 per cent.

#### DIETARY TREATMENT OF CIRRHOSIS

In 1937 Patek<sup>10</sup> published a preliminary report on the treatment of alcoholic cirrhosis with a nutrititious diet together with vitamin supplements. Convinced that the improvement that followed treatment appeared to be outside chance expectations, he was encouraged to extend the program of treatment to embrace a larger series of patients over a longer period of time and he recognized the importance of comparing the course of patients so treated with that of a similar group of hospitalized patients who had not received special dietary therapy. This led to the review of the 386 "untreated" cases by Ratnoff and Patek,<sup>1</sup> the 1941 report by Patek and Post<sup>11</sup> on 54 patients with decompensated cirrhosis treated with the new dietary regimen, and the 1943 paper by Patek<sup>2</sup> furnishing a more recent follow-up on the 1941 series.

Through a careful analysis of the symptomatology and physical signs in his group of 54 "treated" patients and a comparison of the figures thereby obtained with those for the "untreated" group of 386 patients, Patek was able to present convincing evidence that the "treated" group prior to receiving treatment was, if anything, more severely afflicted than the "untreated" group. Eighty-nine per cent of the "treated" patients had ascites when first observed, while 63 per cent had jaundice and 24 per cent gave a history of hematemesis. In other words, it is fair to conclude that the "treated" and control series are entirely comparable as far as severity of the liver condition is concerned. And as a corollary to this conclusion, it would seem justifiable to accept any statistically supported improvement in the average survival period for the treated group as distinctly significant.

What then is this *Patek dietary regimen*? The diet is rich in protein and ample in carbohydrate and fat. Containing approximately 3,600 calories, it is distributed in the following proportions: protein 139 gm. (including the protein in the brewer's yeast), fat 175 gm. and carbohydrate 365 gm. The diet\* consists largely of meat, milk, eggs, fruit and green vegetables. Meat is served twice daily: milk

five times daily—three times with meals and twice with 25 gm. of powdered brewer's yeast. The yeast is fed in graded, increasing doses up to the final amount. Even so, certain patients cannot tolerate brewer's yeast; for these, oral vitamin-B complex has been substituted in the form of liquid yeast concentrates. In addition, thiamine hydrochloride (5 mg.) is injected intramuscularly every day, and concentrated liver extract (5 c.c.) twice weekly. During the critical period of hepatic decompensation the cirrhotic patient, to whom food is often loathsome, presents a real challenge to nursing and dietetic care. Patek urges that the intake at each meal be charted in order to keep account of the actual consumption. In patients with ascites salt intake is restricted only by the exclusion of a salt-shaker from the tray; fluids are allowed, up to 2,000 c.c. daily. Too rigid restriction of salt and water may prove harmful to these patients by precipitating symptoms of hypochloremia and dehydration. It should be pointed out that, with each abdominal tap, considerable salt is removed as well as an appreciable quantity of protein. Nonetheless, it is desirable to tap abdominal fluid before the patient is too distended, for this interferes seriously with the appetite. In an attempt to space out the intervals between paracenteses, mercurial diuretics may be injected once or twice a week following the oral administration of 3 to 4 gm. of ammonium chloride daily for several days.

Of Patek's 54 patients treated on this regimen, 22 showed signs of progressive failure and went on to die, 18 of them succumbing within the first five months of starting treatment. Twelve of the 54 patients were partially improved as shown by the loss of ascites and improvement in liver function tests; five were lost sight of; three remained free of ascites but failed to regain robust health; while four subsequently died after being ascites-free for over two years in each instance. The remaining 20 of the 54 patients were regarded as showing signs of "clinical recovery," their improvement fulfilling three criteria: 1) gain in weight and strength permitting the patient to resume his previous activity; 2) loss of ascites, edema and jaundice without recurrence; 3) changes in serum proteins, Takata-Ara, and bromsulphalein excretion tests towards normal values. In the latter group, although it seemed highly unlikely that the histologic changes were completely reversed, it was clear that the process had been arrested or partially reversed.

Comparing the control and "treated" series, Patek and his associates showed that 60 per cent of the treated patients, in contrast to only about 7 per cent of the control group, experienced the spontaneous disappearance of ascites. The period of survival of patients after the onset of ascites showed the following differences:

\*Complete dietary list may be found in the article by Patek and Post.<sup>11</sup>

	Control	Treated
At 6 months	57%	72%
" 1 year	37%	57%
" 2 "	22%	45%

These figures have been subjected to statistical analysis and their significance has been established beyond the shadow of a doubt. Patek predicts that far superior results might be expected if the dietary treatment could be instituted earlier in the disease before signs of hepatic decompensation had appeared.

His interest stimulated by Patek's original report on the dietary treatment of cirrhosis and the volume of suggestive experimental work already mentioned, Snell<sup>12</sup> began treating cirrhotic patients with a nutritious diet supplemented with various vitamins. His regimen differed materially from that recommended by Patek. The diet was high in carbohydrate (500 gm.), low in fat (about 60 gm.), and rich in proteins not derived from meat sources (110 gm.), providing roughly 3,000 calories per day. The protein component of the diet was derived chiefly from vegetables, milk and egg-white, meat being kept at a minimum. The basis for this change in protein composition was Bollman's report that animals with experimentally produced hepatic injury are made worse by the administration of meat or meat extracts, while tolerating protein from other sources without harmful effect. Snell supplemented his diets with various pure vitamins, crude oral liver extract, and yeast or yeast concentrates. In order to facilitate absorption of fat-soluble vitamins, patients were given animal bile salts, 0.3 to 1.0 gm. with each meal. This program gave very encouraging results in a group of 50 decompensated cirrhotic patients so treated. A few remarkable "cures" with disappearance of ascites were encountered, one of the most striking in a man aged 72 who after two years of almost weekly paracentesis remained free of ascites and in good health for one year. The results of treatment were regarded as "excellent" in 44 per cent of the entire group,<sup>13</sup> although only 22 per cent were entirely free from ascites at the time of the report. Snell agrees with Patek that an even higher incidence of "cures" is to be expected among patients who present various degrees of fatty metamorphosis, degeneration and necrosis without extensive portal fibrosis and great restriction of portal blood flow.

In a recent report on the diagnosis and clinical course of fatty liver in 70 alcoholic patients, Keefer and Fries<sup>14</sup> stress the therapeutic value of a high-carbohydrate, low-fat diet with a moderate amount of protein, supplemented with vitamin preparations and liver extract. They regard the fatty liver as the precursor of cirrhosis, but point out that ascites, jaundice, and death may occur during the stage when the liver is filled with fat

and before actual fibrosis has developed. In some cases, the process appeared to be reversible. The recognition of this disorder in its early stages and the use of appropriate treatment was followed in many instances by recovery.

For the past several years we have been keenly interested in the dietary treatment of cirrhosis at the Johns Hopkins Hospital. To date too few patients have been so treated to justify any final conclusions, but we have seen sufficiently encouraging results to warrant a continuation of the regimen. In general, it has been our policy to adhere fairly closely to the Patek diet with the exception that the fat content of the diet has been considerably reduced for patients with jaundice or diarrhea. Since Snell's reasons for withholding meat are based on purely experimental grounds not necessarily applicable to the human liver and since meat is known to contain protein of "highest biologic value," we have not eliminated meat from our diet, but rather supplied it in liberal portions with complete impunity as far as we could ascertain. We have supplemented the diet with 30 to 50 gm. of brewer's yeast powder a day and polyvitamin capsules in numbers sufficient to supply at least twice the estimated normal adult requirement for the vitamins of proven importance in human nutrition, namely, vitamins A, C, D, thiamine, nicotinic acid (or the amide), and riboflavin. Where hemorrhagic phenomena were observed with prolongation of the prothrombin time, vitamin K was administered either parenterally or orally along with bile salts to promote its absorption. Intramuscular injections of crude (rather than concentrated) liver extract have been given in some cases, especially when macrocytic anemia was present. Furthermore, the oral administration of crude liver extract powder has been employed in certain instances. In view of the experimental work on the lipotropic action and protective effects exerted by choline on the liver, it seemed plausible to Wintrobe and the writer to administer this substance to patients with cirrhosis as an additional supplement to the measures already outlined. At least ten patients have now received choline chloride, 1.5 gm. a day, administered in the form of a 10 per cent elixir prepared by the hospital pharmacy, in doses of 5 c.c. after each meal. No untoward effects have been noted after the continued administration of choline for weeks or even months. It is as yet too early to speculate upon the possible merits of choline therapy in cirrhosis.

#### ADJUNCTIVE THERAPEUTIC MEASURES

**Combatting Secondary Vitamin Deficiency.**—In addition to the highly suggestive evidence already presented that vitamin deficiency plays an important role in the etiology of liver disease, it has been firmly established that preëxisting liver dis-

ease predisposes toward the development of numerous and varied manifestations of vitamin deficiency. Liver disease may contribute to the deficiency of the fat-soluble vitamins A and K in one of three ways: 1) failure of proper absorption in patients with jaundice; 2) failure of storage of the vitamins in the diseased liver; 3) disturbance of intermediary metabolism of the vitamins in the damaged liver. In patients with obstructive jaundice or hepatitis the dearth of bile salts in the intestinal tract results in poor absorption of fats and fat-soluble vitamins. Carotene furnishes the chief source of vitamin A in the average diet, and the normal liver converts carotene to vitamin A through the action of an enzyme, carotenase. Since a severely damaged liver will not effect this conversion, it is not surprising that low blood levels of vitamin A along with clinical manifestations of vitamin A deficiency (e.g., night blindness, keratomalacia, and epithelial metaplasia of various organs) have repeatedly been described in patients with cirrhosis or other forms of liver disease. Therapy or prophylaxis should consist in large doses of vitamin A administered orally with bile salts or large parenteral injections of vitamin A. Little improvement is to be expected from a high carotene intake in patients with severe liver damage.

The recognition of the etiologic role of vitamin K deficiency in the hemorrhagic diathesis so common in patients with jaundice or severe liver damage represents one of the most important contributions to medical knowledge within the last decade. This hemorrhagic tendency has been conclusively shown to be due to lowered plasma prothrombin, which in turn results from inadequate absorption of vitamin K, failure of the severely damaged liver to utilize vitamin K in the formation of prothrombin, or a combination of these two conditions. The failure of jaundiced patients to absorb vitamin K may be controlled by the oral administration of the bile salts along with vitamin K preparations or the parenteral administration of a purified vitamin K derivative such as 2-methyl-1, 4-naphthoquinone (1 to 4 mg. a day intramuscularly). If the liver is so severely damaged that it cannot produce prothrombin in spite of an adequate supply of vitamin K, bleeding will not be influenced by either of these methods of administering vitamin K and the prognosis becomes extremely grave. Under such circumstances, transfusions of freshly drawn blood should be given to supply prothrombin directly. The full understanding and proper application of these principles by surgeons and internists alike will go far toward decreasing risk from hemorrhage in jaundiced patients.

In addition to the special function of the liver with reference to vitamin A and K, the liver is

known to serve as a storage depot for the majority of vitamins (A, B-complex, C, D, K) and probably provitamins as well. Hence, patients with severe liver disease are bound to have inadequate reserves and are, therefore, more likely to develop outspoken manifestations of vitamin deficiency under the added strain of any severe infection or curtailment of food. This situation affords still another reason for our advocating the liberal use of pure vitamins in addition to the high-vitamin diet and crude vitamin sources in the treatment of cirrhosis.

Treatment of the Anemia.—Macrocytic anemia with leukopenia is not an uncommon finding in patients with cirrhosis, even though their gastric juice may contain free hydrochloric acid and Castle's intrinsic factor. It has been postulated that this macrocytic anemia is due either to failure of the diseased liver to store adequate reserves of the anti-pernicious anemia principle or to improper metabolism of this principle in the diseased liver. This macrocytic anemia will respond to oral or parenteral therapy with liver extract in certain instances, but the response is rarely so dramatic or so complete as in patients with true pernicious anemia, and the macrocytic anemia of certain cirrhotics appears to be unaffected by liver therapy.

If there has been repeated blood loss from esophageal varices or constant oozing from hemorrhoids, the anemia in cirrhosis may be hypochromic and microcytic. In such cases iron therapy is indicated and best administered in the form of ferrous sulfate 0.2 to 0.4 gm. after each meal. Transfusions, of course, become necessary in patients suffering large or prolonged hemorrhages from ruptured varices.

Diuretics and Paracentesis. — When ascites or edema is present, the daily fluid intake should be limited to 2,000 c.c. and the salt intake restricted to the extent of permitting no salt on the tray. Furthermore, since tense ascites interferes seriously with appetite, intestinal motility and the absorption of food, it is most important to combat this condition vigorously. It is desirable to postpone paracentesis as long as possible; hence, diuretic measures should first be given a trial. As a rule we give ammonium chloride (in the form of enteric-coated tablets) 3 to 4 gm. a day by mouth for several days, followed by one or more intravenous injections of mercupurin, 1 to 2 c.c. at a time for one day to three days in a row. This procedure may be safely repeated at seven- to 10-day intervals. When diuretic measures fail to accomplish adequate relief from ascites, then paracentesis becomes imperative. The intervals between paracentesis can best be gauged by the weight curve, the condition of the abdomen, and the subjective status of the patient. There is no point in encouraging stoicism on this score.

**Surgical Treatment of Ascites and Varices.**—For many years the Talma operation or *omentopexy* (an operation designed to bring the omentum out into the abdominal wall in the hope of facilitating the development of collateral venous circulation) was thought to be a valuable measure for the relief of ascites. However, the operative mortality was high, since cirrhotics tolerate anesthesia and surgical procedures poorly, and the end results in those who survived were rarely good enough to arouse enthusiasm for this form of therapy. In recent years omentopexy has been largely discarded as a therapeutic measure.

More recently *injection of a sclerosing agent* into esophageal varices through an esophagoscope has been tried in an attempt to thrombose these veins and thereby prevent future hemorrhages. This procedure is a relatively new one and must await the test of time in a larger series of cases before its true value can be assessed. *Ligation of the coronary vein* of the stomach has been carried out in the hope of taking part of the load off of the esophageal varices. Operative *anastomosis of the splenic vein to the renal vein* has also been suggested as a means of shunting a considerable volume of blood away from the portal system; this is, of course, a modified Eck fistula.

The most radical surgical procedure designed to relieve ascites and to decrease the strain upon esophageal varices is *splenectomy*. From the hypothetical standpoint it would be desirable to remove the spleen in all cirrhotic patients with ascites or varices in order to reduce by no inconsiderable quantity the amount of blood entering the portal system. Unfortunately, the majority of patients with cirrhosis tolerate poorly prolonged anesthesia and the shock of such a major operative procedure. However, in selected cases splenectomy may be followed by striking improvement as illustrated in one of the cases to be reported briefly.

### Case Reports

In order to illustrate some of the therapeutic principles that have been described, we should like to present brief abstracts of four case records of patients treated by the writer within the last three years.

**Case 1.**—J. H., a white liquor salesman, aged 34, was first seen in February, 1942, complaining of jaundice and abdominal swelling. His father, a heavy drinker, had died of cirrhosis of the liver in his 40's. Although always a nervous, high-strung person, the patient had enjoyed excellent health up until the winter of 1939 when he suffered a severe nervous shock as the aftermath of seeing his son struck by a truck. He lost his appetite, ate little, and slept poorly for the next 18 months. During this period he took fruit juices, various fruits, milk, bread and butter, but he took no vegetables, meat or eggs. He drank from four ounces to a pint of whiskey a day. He lost 30 pounds in weight and became so weak he was obliged to go to bed whence he was admitted to a hospital delirious with gener-

alized edema and albuminuria. He was eventually discharged with a diagnosis of liver and kidney trouble. He returned to work very weak, but was eating better, including meat in his diet twice a week and three polyvitamin tablets daily. He claimed he took no more alcohol except two to five bottles of beer a day. In August, 1941, he began to feel sluggish, lost his appetite, ate poorly once more, chiefly liquids, and again lost weight. In December, jaundice set in and progressively deepened with frequent light pasty stools and dark urine. There had been fluctuating swelling of the abdomen and legs during the six months prior to admission. There was no gross hemorrhage from the gastrointestinal tract, but some blood-streaking on the stools from straining.

The principal physical findings were deep jaundice, edema of the legs, numerous "spider" angiomas over the neck and shoulders; dental caries; lungs clear; heart pushed upwards and outwards, sounds clear except for systolic murmur at the apex, pulse regular, blood pressure 145/85; well marked ascites with evidence of collateral venous circulation over both flanks; liver tremendous with upper border of dullness at right fifth rib and lower edge felt two cm. below level of umbilicus on the right. The edge extended across the epigastrium just above the umbilicus to disappear beneath the left costal margin. The liver felt hard but smooth except for a notch between the lobes in the epigastrium. The spleen was not felt. There were no external hemorrhoids. Neurologic examination was normal.

The admission diagnosis was cirrhosis of the liver with a superimposed episode of acute hepatitis or hepatic necrosis. Neoplasm of the liver was considered possible but unlikely.

**Laboratory Findings:** The blood count on admission showed no anemia but a marked polymorphonuclear leukocytosis: r.b.c. 4,870,000, hbgn. 14.5 gm. or 100%, volume packed r.b.c. 42.2, giving normal indices; leukoc. 17,200—juv. 11, seg. neut. 81, lymph. 5, monoc. 3, sedimentation rate (Wintrobe method) markedly accelerated, 44 mm. corrected to 36 mm. Urine was slightly cloudy, dark brown, sp. gr. 1.010, acid, albumin 2-plus, bile 4-plus, rob. negative; microscopic examination showed bile-stained hyaline and granular casts, but no erythrocytes, leukocytes or amino acid crystals. Serologic test for syphilis was negative. Stool was pasty gray, negative for occult blood and bile pigment. The remainder of the laboratory findings during the patient's stay in the hospital are summarized in Table 1.

**Clinical Course:** This patient was desperately ill on admission and seemed to grow worse during the first two weeks with increasing jaundice, ascites which recurred rapidly after each paracentesis and failed to respond to diuretic measures, and an intractable fatty diarrhea which persisted for seven weeks, unaffected by orally administered bile salts or pancreatic enzymes. A diet high in protein, carbohydrate and vitamins but low in fat was prescribed, supplemented with brewer's yeast powder 30 gm. a day, polyvitamin capsules\* (two a day), choline chloride 1.5 gm. a day, and intramuscular injections of 6 c.c. crude liver extract every third day. Since the patient was too ill to consume his full diet, additional carbohydrate was supplied in the form of 10 per cent glucose intravenously almost every day for the first four weeks. He ran an irregular fever as high as 102° F. at times. As a result of too rigid salt restriction and loss of sodium chloride at paracentesis he became dehydrated with hypochloremia, prerenal azotemia and moderate acidosis. When the salt intake was increased, the nonprotein nitrogen fell to nor-

\*The polyvitamin capsule used in treatment of this patient and the other three patients was Dayamin (Abbott). Each capsule contained: vitamin A, 10,000 U. S. P. units; vitamin D, 1,000 U. S. P. units; thiamine hydrochloride, 3 mg.; riboflavin, 2 mg.; ascorbic acid 50 mg.; nicotinamide, 20 mg.; pyridoxine hydrochloride, 1 mg.; pantothenic acid, 1 mg.

TABLE I.—LABORATORY FINDINGS IN CASE I

Date	Serum Bilirubin (mg. per 100 c.c.)	Total Serum Protein (gm. per 100 c.c.)	Serum Albumin (gm. per 100 c.c.)	N.P.N. (mg. per 100 c.c.)	Serum Chloride (Meq. per L.)	Co <sub>2</sub> Comb. Power (vols. per 100 c.c.)	W.B.C.	Hgb. in gm.	Vol. Packed R.B.C.	Pro- throm Time in sec.
Mar. 2	16.5	4.76	2.56	40			17,200	14.5	42.2	62/20*
10	18.5			80	92.4	53.2	21,500	15.2	44.0	18/15
17	19.0	4.65	2.51	70	90.4	40.9	28,750	14.8	42.0	
23	14.0			60	96.6	36.2				20/14
30	4.9				101.6	33.4	16,500	12.0	36.5	
April 4	3.3	4.50		30	105.6	33.4				
10	1.6	5.10		30	102.6	32.4**	13,000	13.3	38.9	20/16
17	2.0			28	105.6	37.2				
24	1.2			30	103.2	43.8	13,150	13.5		
May 1	1.6	5.08	2.84	32	102.8	51.3				
12	0.6	4.75	2.73	25	113.6	54.1	4,800	16.0	48.8	19/19

\*Results of prothrombin time expressed as 62/29 means for patient 62 sec. as compared with normal control 20 sec.

\*\*At this time the serum sodium was distinctly low, 129.0 milliequivalents per liter.

TABLE II.—LABORATORY FINDINGS IN CASE II

Date	Serum Bilirubin (mg. per 100 c.c.)	Total Serum Protein (gm. per 100 c.c.)	Serum Albumin (gm. per 100 c.c.)	N.P.N. (mg. per 100 c.c.)	Serum Chloride (Meq. per L.)	W.B.C.	Hgb. in gm.	Vol. Packed R.B.C.	Brom- sulf- alein Ret. after 30 min.	Hippuric Acid Excretion in gm.*
Mar. 11	2.7	6.75	2.31	25		8300	13.8	39.6	25%	
14					104.8					0.28
April 5	0.8	7.81	2.19	25		72,00	13.7	37.7		
25	0.9	6.63	2.00	31		7950	13.0	36.5		
May 16	0.8	6.13	2.13	23	101.0	4150	12.3	34.0	7%	
June 28	0.8	7.31	3.00	29	95.0	6300	12.6	38.2		
Sept. 20	0.9	6.13	3.19	34	107.0	5000	11.9	34.7	7%	1.15

\*Normal result is 1.0 gm. or more excreted within one hour after intravenous injection of 1.77 gm. of sodium benzoate.

mal as the blood chloride rose to a normal level. However, at this stage the acidosis was still pronounced as shown by the persistent reduction in the carbon dioxide combining power. Dr. George Thorn interpreted this acidosis as resulting from bicarbonate loss in which the prerenal azotemia and the strongly acid ash (high protein) diet were chief contributory factors. The low serum sodium at a time when the serum chloride had returned to normal fits in with Dr. Thorn's interpretation. The patient became delirious and was extremely difficult to manage during the azotemic acidotic phase of his illness. The marked leukocytosis was thought to be due to extensive hepatic necrosis. In view of the much prolonged prothrombin time on admission, the patient was given synthetic vitamin K 2 mg. intramuscularly daily for the first three weeks, 1 mg. every second day thereafter. The fact that the prothrombin time improved under vitamin K therapy was one of the few encouraging signs during the early weeks of treatment.

Throughout the first three weeks little hope was held out for the patient's recovery. Then he rather suddenly began to improve as shown by increase in appetite, cessation of loss of flesh weight, return of mental faculties, diminution in size of liver, decrease in jaundice with eventual return of serum bilirubin to normal, and gradual decline of w.b.c. to normal. He was discharged from the hospital on May 12th, 10 weeks after admission, on the full dietary regimen, and required no further paracentesis although it was necessary to administer intravenous mercupurin on May 22nd and June 1st to combat recurrent ascites. He experienced an excellent diuresis on each occasion, and thereafter the ascites slowly subsided spontaneously.

When the patient was last seen on June 18th, there was practically no ascites, the liver was only 3 cm. below the right costal margin, and the tip of the spleen was felt for the first time. He was feeling fine and had regained flesh. Shortly thereafter he returned to work. Repeated efforts to persuade the patient to report at regular intervals were unsuccessful. It was learned from his wife that after remaining abstemious and following his therapeutic regimen for several months, during which period he seemed perfectly well, he began drinking once more, stopped eating and eventually died in August, 1943, with jaundice and ascites.

**Comment.**—A 34-year-old alcoholic liquor salesman was admitted to the hospital desperately ill with what was regarded as acute hepatic necrosis, presumably superimposed on underlying cirrhosis. His illness was characterized by fever, leukocytosis, deep jaundice, ascites and fatty diarrhea. On a modified Patek regimen, including the oral administration of choline chloride and intramuscular crude liver extract, he made a remarkable recovery with complete clearing of jaundice and ascites, only to succumb 15 months later after returning to his alcoholic ways and abandoning his therapeutic regimen. This type of patient should have excellent prospects of a permanent "cure" provided he could be maintained indefinitely on a nonalcoholic regimen with a nutritious diet.

**Case II.**—P. B., a white retired businessman and farmer, aged 66 years, was admitted to the hospital on March 10th, 1944, complaining of jaundice, abdominal swelling and loss of appetite. His father had died of cancer of the throat. The patient had enjoyed excellent general health throughout his life up to the onset of the present illness. For 10 years he had noted a postnasal drip and nasal obstruction,

attributed to sinusitis. He had also suffered from arthritis of his shoulders and back for at least 10 years. For many years he had been a heavy drinker with the exception of one period of seven to eight years when he stopped drinking entirely. Throughout the 10 years prior to the onset of the present illness he had consumed at least a quart of distilled spirits a week. He claimed to have eaten fairly well over this period. During the summer of 1943 the patient began to suffer from postprandial epigastric pain; he lost his appetite and was afraid to eat, although he remained partial to small servings of rare red meat. His total daily food intake was very poor and he lost a great deal of weight. Six weeks before admission he developed jaundice with generalized pruritus. This was followed by marked swelling of the abdomen and legs. There had been no hemorrhagic phenomena.

On physical examination the patient was an unusually tall, large-framed man who seemed somewhat confused mentally. He showed evidence of weight loss over the upper half of the body, with pronounced soft pitting edema over the legs, abdomen and lower back. The complexion was bronzed with slight icterus; no vascular "spiders" were seen. The tongue was normal; lungs were clear with definite emphysema; the heart was not enlarged, sounds distant with soft systolic blow all over; the pulse regular, moderate arteriosclerosis, blood pressure 155/80. The abdomen was hugely distended with bulging in the epigastrium and both flanks, marked shifting dullness and suggestive fluid wave. The liver and spleen were not felt; there were no hemorrhoids. The neurologic examination was negative except for absent ankle jerks and questionably diminished vibratory sense in the legs.

The admission diagnosis was cirrhosis of the liver with ascites and mild jaundice, probably on a dietary deficiency basis in a man with a background of overindulgence in alcohol. Carcinoma of the tail of the pancreas was considered possible but less likely.

**Laboratory Findings:** Blood count: r.b.c. 4,320,000, hgbn. 13.8 gm. or 95% volume packed r.b.c. 39.6, giving normal indices (the blood remained normocytic and normochromic throughout); leukoc. 8,300—pmn. n. 81, pmn. eos. 1, lymphc. 8, and monoc. 10; sedimentation rate 50 mm. corrected to 36 mm. in one hour (Wintrobe method). Urine was orange, clear, acid; sp. gr. 1.016; no sugar or albumin; faintly positive for bile; strongly positive for urobilinogen up to 1:320 dilution; occasional leukocytes, hyaline and granular casts. Serologic test for syphilis was negative. The prothrombin time was 17 seconds as compared with normal control of 16 seconds. The remainder of the more important laboratory results throughout the period of observation are summarized in Table 2.

**Clinical Course:** The clinical course and therapy of this patient make a very interesting study. He was kept upon the full Patek diet from the start. This was supplemented daily with 30 gm. of brewer's yeast powder, three polyvitamin tablets and later 1.5 gm. of choline chloride. In addition he was given an intramuscular injection of 2 c.c. of parentisol-B\* daily for the first seven weeks. Two intramuscular injections of crude liver extract caused so much local discomfort that this form of therapy was abandoned. The chart demonstrates the striking diuresis obtained on each occasion from combined therapy with oral ammonium chloride (enteric-coated tablets) and intravenous mercupurin, also the increasing tendency to spontaneous diuresis after the patient had been under treatment for several weeks. Since the fluid intake was kept fairly constant throughout (never over 2,000 c.c. in one day), the fluctuation in urinary output may be regarded as significant. The loss of 40 pounds in weight

\*Parentisol-B (Squibb) is provided in sterile ampules for parenteral use. Each c.c. contains thiamine hydrochloride 10 mg., riboflavin 4 mg., and niacinamide 200 mg.



shown on the chart may be attributed almost entirely to steady decrease in edema and ascites, as there was little evidence of actual loss of flesh. The ascites had disappeared completely after seven weeks, at which time the hard liver was readily palpable 4 cm. below the right costal margin and the tip of the spleen could also be felt.

After four weeks on the therapeutic regimen the patient began to exhibit evidence of steady improvement as shown by the diminishing ascites and edema, the disappearance of the slight icterus with return of the serum bilirubin to normal, and the decrease in bromsulfalein retention. The serum albumin remained low, around 2.0 gm. per 100 c.c., throughout his hospital stay. The hypalbuminemia was thought to be an important contributory factor in the edema, ascites and the right hydrothorax which developed six weeks after admission. The only peculiar features of the hydrothorax were: 1) that it appeared at a time when the edema and ascites had almost cleared up, and 2) that the chest fluid had an unusually high protein content (3.88 gm. per 100 c.c.) and cell count (7,650) for a transudate. An underlying pulmonary infarct and cardiac failure on an arteriosclerotic basis were considered as possible alternative explanations for the hydrothorax. In view of a potential element of cardiac failure, the patient was digitalized without obvious effect on the hydrothorax or the urinary output.

The patient was discharged from the hospital on May 17th in excellent condition. He was reexamined in June and September. There was no recurrence of ascites or jaundice on either occasion; moderate edema of the legs had been present ever since he became ambulatory once more. The steady rise in serum albumin to 3.19 gm. per 100 c.c. on September 20th along with the normal hippuric acid excretion test on the same date furnished convincing objective evidence of improvement in his liver function. Latest reports from the patient, in November, 1944, eight months after dietary treatment was inaugurated, attest to his continued good health. He has adhered strictly to the Patek diet with yeast and vitamin supplements, while taking courses of choline intermittently, ever since discharge from the hospital.

**Comment.**—This 66-year-old man with cirrhosis of the liver, quite conceivably on a dietary deficiency basis, made an excellent response to the Patek regimen supplemented with choline chloride. Since there was an excellent response to diuretic measures on three separate occasions, paracentesis was at no time necessary. The patient has remained free of jaundice and ascites for over six months, while a steady rise in serum albumin, decrease in bromsulfalein retention, and increase in hippuric acid excretion (following the injection of sodium benzoate) furnish additional objective evidence of improvement in liver function.

**Case III.**—E. H., a white male restaurant owner and bartender, aged 56 years, was admitted to the hospital on March 3d, 1943, complaining of abdominal swelling of three months' duration. Family history was noncontributory. Past history revealed nothing of unusual interest except for the fact that the patient had been a heavy drinker of both beer and spirits for many years. For six months prior to admission he had been eating very poorly; as he put it, he was "too busy to eat." He would eat chiefly potatoes and butter, rarely meat, fruit or vegetables. During the six months he lost 30 pounds in weight. In December, 1942, there was insidious onset of painless abdominal swelling which gradually increased. He had not noticed jaundice and had never suffered a gastrointestinal

hemorrhage. There had been some swelling of the legs for several months.

The principal findings on *physical examination* were as follows: evidence of marked weight loss with striae on arms; slight icterus; soft pitting edema over legs and lower back with stasis eczema on lower legs; red papular eruption over face and numerous vascular "spiders" over neck, arms and upper trunk; beefy red smooth geographical tongue; chest emphysematous, lungs clear; heart normal in size with regular rhythm and blood pressure 140/70; abdomen hugely distended with ascites; collateral venous circulation over abdominal wall. No organs or masses were felt prior to tapping the abdomen. Following paracentesis the abdomen was soft; the hard, somewhat irregular liver edge was felt just below the right costal margin and extending across epigastrium 5 cm. below xiphoid. Spleen was not felt. Neurologic examination was entirely normal.

The *admission diagnosis* was cirrhosis of the liver with jaundice and ascites, probably on dietary deficiency basis in a heavy alcoholic.

**Important Laboratory Findings:** Blood count: r.b.c. 4,280,000, hgbn. 13.8 gm. or 95%, volume packed r.b.c. 39.9, giving mean corpuscular volume of 93 cu. microns (a figure slightly on the macrocytic side); leukoc. 7,850 with normal differential count; sedimentation rate markedly elevated to 51 mm. (corrected to 37 mm.) in one hour; icterus index 18. Urine showed 1 to 2 plus albumin, urobilin but no bilirubin. Serologic test for syphilis was negative. The blood nbn. was 30 mg. per 100 c.c., fasting sugar 85 mg. per 100 c.c., chloride 102.6 milliequivalents per liter, total serum protein 7.50 gm. per 100 c.c., with albumin 3.06 gm. and globulin 4.44 gm. per 100 c.c. van den Bergh test gave a delayed biphasic reaction with serum bilirubin 1.8 mg. per 100 c.c. Liver function tests: bromsulfalein test showed 30% retention after 30 min.; hippuric acid test revealed only 0.11 gm. excreted at the end of one hour. Prothrombin time 24 seconds compared with normal control of 13½ seconds. Stool showed bile and gave a faintly positive test for occult blood.

**Course:** The patient was placed on the Patek diet (except that fat content was reduced), supplemented with brewer's yeast 45 gm., 10% elixir choline 15 c.c., one poly-vitamin capsule, and 3 mg. of vitamin K daily by mouth. Paracentesis was performed the day after admission, yielding 10,500 c.c. of straw-colored fluid with sp. gr. 1.016, protein 10 gm. per liter 300 cells (chiefly lymphocytes). The patient remained in the hospital for eight weeks during which time he lost ground steadily, his weight falling from 175 to 137 pounds. He experienced great difficulty in taking his full diet although he made a sincere effort. Paracentesis was performed six times in all, yielding 8,000 to 13,000 c.c. of fluid at each tap. Ascites reaccumulated rapidly after each tap in spite of restricted intake of fluid and salt. Attempts to relieve the ascites with ammonium chloride and mercupurin met with only slight success, insufficient to forestall the necessity for repeated paracenteses. The prothrombin time failed to improve materially following the administration of vitamin K either orally or intramuscularly (of ominous import as regards the severity of the liver damage). The bromsulfalein retention was 25 per cent at the end of the hospital stay, a value almost identical with the original figure.

After discharge from the hospital the patient attempted to follow the entire regimen at home, but continued to lose weight. He required taps at weekly intervals, eventually became wildly delirious and died on July 14th following a massive hematemesis.

**Comment.**—This case represents an instance of cirrhosis so advanced that the pathologic changes

must have been completely irreversible. In spite of the dietary regimen instituted, the course was progressively downhill to death. One point of special interest was the failure of the prothrombin time to return to normal after adequate parenteral therapy with vitamin K, an indication of the severity of the parenchymal liver damage.

*Case IV.*—E. K., a white electrician, aged 39 years, was admitted to the hospital March 26, 1943, complaining of abdominal swelling for nearly two years. The family history was noncontributory. In the past history it was of interest that up to 1936 he had worked in a rubber heel business where he was exposed to fumes of sulfur and various solvents. There was no exposure to chemicals thereafter. Early in 1940 he suffered a severe electric shock which knocked him unconscious and caused serious burns. He spent six weeks in a hospital at the time. Appetite had been excellent with well balanced diet, and alcohol had been taken sparingly, not over four glasses of beer a month. In August, 1941, he noticed increasing weakness, malaise and fatigue. One month later he suffered massive hematemesis two days apart, requiring admission to a hospital for transfusion. His abdomen then began to swell and exploratory laparotomy was performed with the possibility of perforated ulcer evidently in mind. A large volume of ascitic fluid was removed at operation and an omentopexy was performed. During the next four months he required paracentesis every eight to 10 days, until January, 1942, when a spontaneous remission in the ascites occurred and he was able to return to work. In December of that year he suddenly experienced another massive hemorrhage into the gastrointestinal tract with both hematemesis and tarry stools. Shortly thereafter abdominal swelling recurred. After several transfusions he was strong enough to go to a hospital in Philadelphia where his esophageal varices were injected in an attempt to thrombose them. Two days later he again bled profusely and there was one more hematemesis, in January, 1943. The patient had been treated for several months outside the hospital on the Patek regimen. In spite of this and the surgical procedures, he required four paracenteses between January and March, 1943, when he was admitted to the hospital. The last paracentesis was performed 10 days before, yet he was already uncomfortable from abdominal distention at the time of admission. He had lost 20 pounds during the previous six months. There had been no jaundice at any time.

On physical examination the important findings were as follows: moderate pallor without icterus, evidence of weight loss, soft edema about ankles, several vascular "spiders," "liver palms," tongue a beefy red but no papillary atrophy present; lungs clear, bases high; heart pushed upward, split first sound with soft systolic blow at apex, pulse regular, blood pressure 105/55; abdomen hugely distended with shifting dullness and striking fluid wave; pronounced collateral venous circulation over abdomen and lower chest; hemorrhoids of moderate size. No organs or masses could be felt in the tensely distended abdomen before paracentesis. After tapping, the abdomen was soft and relaxed; there was an upper midline scar with a large ventral hernia through which the markedly enlarged spleen protruded like an Aleutian isle rising out of the sea. The spleen was very hard, the edge fairly sharp with a distinct notch in the median border; no bruit or friction rub heard over the spleen. A hard nodular liver edge could be felt 4 cm. below the xiphoid in the epigastrium but could not be traced below the right costal margin. Neurologic examination was entirely normal.

Admission impression was Banti's syndrome (due to splenic vein thrombosis) with marked splenomegaly and

secondary cirrhosis of the liver, although the possibility of primary cirrhosis following exposure to toxic substances years before was considered.

*Laboratory Findings:* Blood count: r.b.c. 3,780,000, hgbn. 9.3 gm. or 64%, volume packed r.b.c. 30.3; leukocytes 3,850 with normal differential formula, sedimentation rate 33.0 mm. corrected to 9.0 mm. in one hour. Urine was normal. Serologic test for syphilis negative. Blood chemistry: n.p.n. 40 mg. per 100 c.c., sugar 112 mg. per 100 c.c., serum chloride 110.4 milliequivalents per liter, total serum protein 5.75 gm. with albumin 2.81 gm. and globulin 2.94 gm. per 100 c.c. Prothrombin time was 20 seconds compared with control of 15 seconds. Bromsulfalein liver function test showed 28% retention after 30 min. The sps. kidney function test showed 95% excretion in two hours, an abnormally high value as is frequently seen in liver disease.

*Clinical Course:* The patient was placed upon the Patek diet supplemented with yeast, choline and polyvitamin capsules as in the previous cases. The day after admission he vomited bloody fluid. At paracentesis 10 liters of straw-colored fluid was removed with sp. gr. 1.014 and practically no cells. Six days later, 7,500 c.c. of fluid were removed. The patient was given a transfusion and on April 6th splenectomy was performed by Dr. W. M. Firor under sodium pentothal, nitrous oxide and local anesthesia. The liver was found to be small, hard and nodular, and about one-half normal size. The operator noted several branches of the splenic vein fully 1 cm. in diameter. The left coronary vein was ligated with the splenic pedicle. The spleen weighed 840 gm. Microscopic report by Dr. S. S. Blackman and Dr. R. C. Clay: "The splenic tissue reveals changes which are characteristic of elevated venous tension in the splenic system. These are characterized by dilated venules and splenic sinuses which are now emptied of their blood. There is some fibrosis surrounding these sinuses and the tissues of the pulp seem quite empty. The malpighian bodies are somewhat atrophic." Final pathologic diagnosis was changes in the spleen indicating an increased venous pressure.

The postoperative course was essentially uneventful. Ascitic fluid drained from the abdominal wound for two weeks before the wound closed. The patient was discharged on the 17th postoperative day with only a small amount of ascites present. Two weeks later he was readmitted to the Urologic Service with acute postcatheterization cystitis due to staphylococcus. This cleared up rapidly with one week of sulfathiazole therapy. On May 10th, 7,500 c.c. of fluid was removed at paracentesis. Since then the patient has been seen in June, August and November, 1943; also in March and November, 1944. He experienced no further recurrence of ascites, hematemesis or melena. He gained strength and weight and has been able to hold a 48-hour week defense job without difficulty, returning from work in the evenings so full of energy that he frequently takes his wife out to the movies or to a dance! By August, 1943, his blood count had returned to a normal level and it has remained normal ever since. The patient has continued to follow the Patek diet supplemented with yeast, choline and vitamin capsules ever since splenectomy. Although his liver remains palpably hard and nodular in the epigastrium, he is to all intents and purposes subjectively "cured" at the time of the present writing, 19 months after splenectomy.

*Comment.*—This 39-year-old nonalcoholic man with severe cirrhosis of the liver either primary or secondary to Banti's splenic anemia, who had suffered from repeated hematemeses and recurrent ascites over a 20-month period in spite of omentopexy, injection of esophageal varices, and a

lengthy trial of the Patek regimen, made a dramatic recovery following splenectomy and has remained clinically well with no further ascites, hematemesis or anemia over a 19-month period since the removal of his spleen. It would appear that splenectomy was a life-saving measure in this particular instance. Since the liver was found to be about one-half normal size at operation, the patient was impressed with the importance of continuing on the Patek diet supplemented with yeast and choline. He has followed this regimen religiously and is enjoying excellent health while holding a full-time defense job at the present writing.

#### SUMMARY AND CONCLUSIONS

1. An abundance of experimental and clinical evidence points to dietary deficiency as a most important factor in the etiology of fatty liver and cirrhosis of the liver.

2. Treatment of fatty liver and cirrhosis by a nutritious diet high in calories, protein and vitamins, especially the vitamin B-complex, appears to be the most promising form of therapy for this disease, even after signs of hepatic decompensation such as jaundice, ascites and hematemesis have developed.

3. This dietary treatment of cirrhosis has been discussed in some detail along with adjunctive therapeutic measures including various surgical procedures designed to relieve ascites and to prevent hematemesis.

4. Four cases are presented to illustrate the various aspects of dietary therapy. In one of these cases splenectomy was followed by dramatic relief from both ascites and hematemesis.

In addition to the material reprinted from my article in the Medical Clinics of North America on Modern Treatment of Cirrhosis, the following remarks were made in my talk at Greensboro for the Tri-State Medical Association:

Since the low serum albumin level of plasma has been thought to be an important factor in the causation of ascites in patients with cirrhosis, it seemed logical to hope that the intravenous use of this preparation of albumin might be useful in treating ascites. Thorn and his associates<sup>15</sup> have reported on the effects of such treatment. They gave intravenously 50 gms. per day for periods of one to ten days. They observed a rise in the serum albumin level and a diuresis with relief of edema, but there was very little effect on the ascites. In other words, the results were quite disappointing as far as relief of ascites was concerned.

Ralli, Hoagland, and their associates<sup>16</sup> found no correlation between the serum albumin level and the severity of the ascites in patients with cirrhosis. They did feel that intravenous crude liver extract was a very useful form of treatment. They

further found increased antidiuretic activity of the urine of patients with cirrhosis and ascites. On the basis of this observation they postulated that the diseased liver fails to detoxify the antidiuretic pituitary hormone and that this failure might result in abnormal retention of fluid in such patients which in turn might be an important factor in the persistence of the ascites.

Besides the surgical measures mentioned in the earlier article, I did refer to the use of a glass button in an attempt to establish a communication between the peritoneal cavity and the subcutaneous abdominal tissues in the hope of draining ascitic fluid into the subcutaneous tissues in this way. We have had no experience with this operative measure, but results published in Boston<sup>17</sup> have been rather encouraging.

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#### PULMONARY EMBOLISM TO BE GUARDED AGAINST IN MEDICAL CASES AS WELL AS SURGICAL

(Jacques Carloti et al., Boston, in *Jl. A. M. A.*, Aug. 23rd)

The possibility of pulmonary embolism in medical patients, especially in cardiac cases, should be constantly borne in mind and when discovered, should be treated by bilateral interruption of the common femoral veins to prevent recurrent embolism which could prove fatal. This interruption must always be distal to the sapheno-femoral veins to prevent recurrent embolism which could prove fatal. This interruption must always be distal to the sapheno-femoral junction because, if it is done proximal to it, persistent lymphedema of the entire extremity will develop; we have also pointed out that this interruption should be proximal to the profunda femoris.

# DEPARTMENTS

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### THE DIABETIC KETOSIS PROBLEM

PAGE<sup>1</sup> divides the onus for the deaths from acidosis between the general practitioner, who too often fails to comprehend the significance of acidosis; and organized medicine, which has failed to educate the public properly. The moaning, restless, dull or semi-stuporous patient, with flushed face, sweet breath, Kussmaul breathing, dry cold skin, rapid pulse and low blood pressure, presents the most important problem in handling diabetes.

He considers the subject in some detail and arrives at some cheering conclusions.

In 1940, Stadie et al. demonstrated that ketones could be utilized peripherally and expressed the belief that up to a certain level all fat catabolized was completely oxidized; hence, there would be no ketonuria. Beyond this level not all fat catabolized was completely oxidized, hence, part of the fat catabolized was excreted unburned in the form of ketone bodies.

These findings confirm other recent experiments that seem to eliminate the distinctions that exist between carbohydrate, protein and lipid classifications inasmuch as many of their intermediary products are common to all three classes of food-stuffs.

To return to the restless, semi-comatose, diabetic patient—it is now apparent that his comatose state is not the result of absorption of noxious ketone bodies, but rather the result of dehydration. The cold, dry skin, rapid pulse, and circulatory failure can also be ascribed to the dehydration which is a result of the prolonged glycosuria and ketonuria, with resulting diuresis and the loss of electrolytes. The air-hunger represents an attempt of the body to compensate for the reduced plasma CO<sub>2</sub>. The abdominal cramps result, not only from dehydration, but also from depletion of chlorides, which are lost by way of the urine. Whether the blood-sugar level happen to be high or low does not indicate the severity of the ketosis or affect to any extent the basic therapy. Therefore, next to the administration of insulin to correct the original metabolic defect, the vigorous correction of the dehydration would appear imperative, and it seems that this best could be done with large amounts of water and sodium chloride. To use bicarbonate would be merely treating a symptom and, while perhaps affording a temporary relief, would only

excite the body toward further acid formation. Lactate solution as recommended by Hartmann is readily sterilized, stable, and can be given intravenously or by hypodermoclysis, but its action is essentially that of sodium bicarbonate. It would seem physiologically sound to add some simple metabolite, such as citric acid or citrate which is in equilibrium with components of the tricarboxylic acid cycle and hence might stimulate ketone utilization.

The author summarizes:

Ketosis continues to account for a large number of diabetic deaths.

Ketone bodies are formed in the liver and in other organs of the body; they are merely potential fuel, requiring a small amount of carbohydrate as a catalyst for their proper utilization.

Page concludes with the positive statement that treatment should consist fundamentally of the extensive use of insulin and large amounts of sodium chloride and water, which much simplifies the management of the emergency.

### ENDEMIC TYPHUS FEVER

ANY OF US are liable to encounter a case of endemic typhus fever at any time. The important features are well set forth by a Virginia country doctor.<sup>1</sup>

The first recognition of this disease entity—Brill's disease, New World typhus, murine typhus, flea typhus—was 50 years ago. It is an acute, infectious, febrile disease, produced by one of the Rickettsia. It is primarily a disease of rodents and is generally transmitted to the human through the agency of fleas. It has no preference for social status or economic position. The louse plays a very minor role, if any, in the transmission.

It may be sudden or gradual in onset. The headache becomes severe and persistent. Injection of the conjunctivae is usual. Fever is remitting for 12 to 15 days, and usually returns to normal by rapid lysis. The rash is maculo-papular, rarely hemorrhagic, varied on abdomen, back and chest and spreads outward. The 4th to 8th day is the average time of its appearance; it never appears in crops; it blanches, but does not disappear on pressure. The rash is absent in some cases and may not be recognized on dark skins. Nervous and mental symptoms may be mild or severe. Usually there is a non-productive cough. The positive Weil-Felix reaction alone is not diagnostic for any one of the Rickettsial diseases. A positive with a titre of 1:160 is considered diagnostic if the clinical picture of endemic typhus is present. Convalescence usually is rapid and uneventful. The most common complications are bronchial pneumonia and thrombosis. The mortality rate is low—less than one per cent, some observers say.

1. H. F. Page, Philadelphia, in *Trans. & Studies Col. of Phys. Phila.*, June.

2. John Che-nut, Mountain Grove, Va., in *W. Va. Med. J.*, Oct.

There is no specific therapy. Some have used para-aminobenzoic acid with encouraging results. The treatment of choice is prophylactic, the success of which depends chiefly on the elimination of the rodent reservoir.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### URETERAL STONE

OBSERVATIONS based on a study of 255 cases make up this report.<sup>1</sup> Several hundred cases in which cystoscopy was done for renal pain fairly typical of ureteral stone were not included because definite evidence of calculus could not be demonstrated.

Pain was the chief complaint in 95.4 per cent of the cases. One patient in this series who had a colostomy one year previously for recurrent intestinal obstruction, again had severe abdominal pain with distention. The abdomen was explored to no purpose. During convalescence a calculus was found in the left ureter.

Partial urinary obstruction may produce a dull aching in the lumbar area. A stone low in the ureter near the bladder or in the intramural portion of the ureter may cause frequent and painful urination or pain in the genitals or rectum. Nausea alone or with vomiting occurred in 40 per cent of the cases, backache in 28. One patient had persistent hiccough. There was gross hematuria in 41 per cent; in the others, hematuria was shown microscopically. Bilateral occurrence of ureteral stones is not a rarity.

A history of previous stone was obtained in 29.5 per cent. The incidence of chills, or chills and fever was 15.6 per cent. Grossly purulent urine was present in 14.3 per cent of these cases.

Children describe practically all severe pains as a stomach-ache. It is difficult for a child to localize pain or to describe its radiation.

When the presence of ureteral calculus is suspected, the diagnosis is made by cystoscopy. Intravenous urography may be extremely useful; but the kidneys often do not secrete well enough, in the presence of colic or urinary retention, to permit good visualization. Cystoscopic examination provides the means of feeling the calculus with the ureteral catheter.

Cystoscopy was done in 96 per cent of the cases of this series. In four per cent, intravenous urography was used as the sole diagnostic agent; in 15 per cent, both cystoscopy and intravenous urography were employed. There is a substantial percentage of stones that are nonopaque to the roentgen-ray.

There is a tendency to relieve the colic by ad-

1. F. C. Hamm, in *Brooklyn Hosp.*, July.

ministering morphine and waiting for the passage of a stone. In all cases of renal colic, the upper urinary tract should be visualized. Ureteral stone is a common cause of hydronephrosis; back pressure on the renal pelvis produces dilatation early in the course of the disease. If the obstruction is not of long duration, the distended pelvis will return to its normal contour following removal of the calculus. Varying degrees of hydronephrosis were found in 39 per cent of these cases.

Typical renal colic does not always indicate the presence of stone. It may be produced by the passage of blood clots, tissue, or inspissated pus. Serious abnormalities may be present in the kidney in addition to stones. In one of these cases a pyelogram made following the passage of a small calculus revealed the presence of a carcinoma of the kidney, later proved at operation. In another, renal tuberculosis was found. No symptoms other than ureteral colic had been elicited in these two cases. Polycystic disease, congenital solitary kidney and other anomalous conditions may be found associated with stone.

The symptoms may be so indefinite that disease of almost all of the abdominal and pelvic viscera must be excluded. In this series 12 per cent of the patients with right ureteral stones had had the appendix removed.

A normal urine does not exclude calculus. In 25 per cent of the cases studied, the urine was negative on admission to the hospital, and in 39 per cent there were fewer than 10 leukocytes per h. p. f. All specimens of urine obtained at cystoscopy were cultured; 66 per cent were reported sterile, 19 per cent contained staphylococci and 15 per cent showed Gram-negative bacilli.

The fact that stones were observed frequently following immobilization requires special mention; also that 116 of the patients required no special treatment. After the size, shape and location of the calculus were determined and a normal upper urinary tract was found, the patient was made as comfortable as possible and observed until the stone passed.

Remember that a hot tub bath will relieve colic in some instances when large doses of morphine fail.

No beneficial effect was realized from the administration of various antispasmodics touted as relaxing the muscular tension in the wall of the ureter.

The calculus will almost surely be lost if the patient is not instructed to strain the urine. It is important to know if all of the calculi have passed.

Ninety-nine patients received some form of instrumental aid in passing their stones—from passing a single ureteral catheter past the stone and allowing it to remain in place for 48 hours, to

extraction of the stone by one of the various special instruments.

A safe and effectual method is that of passing one or more catheters beyond the calculus. After the catheters have remained in the ureter for 48 hours, twisting them, on removal, will produce kinking that will engage and remove a good many stones. If the stone is not recovered by this method, the ureter is sufficiently dilated for another type of manipulator to be used. The colic is stopped immediately by providing urinary drainage.

Manipulation is not recommended in cases of long standing where the calculus may be imbedded in the mucous membrane of the ureter, nor in the presence of severe infection.

The use of the flexible catheter loop has become popular since its introduction into this country in 1937. Twenty-eight patients have been treated by this method with immediate delivery of the stone in 19 cases. No evidence of trauma to the ureter was recorded.

Occasionally the stone is dislodged from its original position only to become impacted in a lower situation. Complete obstruction and infection demand immediate surgery. Of 99 patients subjected to manipulative procedures 10 per cent had fever of 100° or more. Ureterolithotomy was performed in three instances and in one nephrectomy was necessary.

Ureterolithotomy was performed in 40 cases, including one instance of bilateral simultaneous removal of stones. Surgery when indicated should be performed promptly. The mortality in this type of surgery is very low. No deaths occurred in patients who underwent ureterolithotomy.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### PREVENTION OF PLACENTAL BLOOD LOSS

DEATH FROM CHILDBEARING remains the greatest tragedy of medical practice. A Chicago doctor-teacher<sup>1</sup> writes on the advantages of certain changes from the generally accepted methods of preventing and treating hemorrhage, which is the principal cause of such deaths.

Davis reports 16 per cent of the cases of fatal postpartum hemorrhage are due to retained placental tissue and 36 per cent are due to atony. The latter group is an even more frequent cause in nonfatal cases and can, by and large, be prevented by a properly conducted second and third stage of labor.

Bleeding from the placental site is controlled by the contraction of the uterus; by retraction, a shortening and thickening of uterine muscle; and by the clotting mechanism. If there is no initial

contraction, bleeding ensues. If retraction fails, bleeding recurs each time a contraction ceases, for no uterus can remain in a state of constant contraction. And, finally, if the clotting mechanism dissolves, late or delayed bleeding will result from opened sinuses.

The uterine wall requires some time to readjust itself to the decreasing size of the cavity as the baby is expelled.

Anesthetized patients must receive an oxytocic. Although the placental blood loss with slow delivery plus no oxytocic compared favorably with a faster delivery plus oxytocic, the least uterine blood loss was encountered when intravenous pituitary and slow delivery were used concurrently.

The baby should be delivered in stages with a 30- to 60-second pause after the delivery of each shoulder, requiring a total of at least three minutes. The placenta has usually separated within one minute. After the fetus is expelled the placenta should be compressed into the vagina and then extracted by gentle drawing on the cord. One unit of solution of posterior pituitary or 0.2 or 0.4 mg. ergotrate may be injected intravenously after the posterior shoulder if the doctor is experienced; if not, then after delivery of the placenta. If bleeding occurs, express the placenta by Credé or explore and remove the placenta manually.

If the placenta is delivered intact and bleeding continues: 1. Repeat the intravenous injection of ergotrate or pituitary. 2. Explore the uterus manually for an accessory lobe and to exclude rupture. 3. Massage. 4. If bleeding continues, pack the uterus—but never pack twice. It is better to perform a hysterectomy if the preceding methods fail. 5. During and after hemorrhage give 1,000-2,000 c.c. saline hypodermoclysis and transfuse with at least 1,000 ml. whole blood. Intravenous plasma, serum and hypertonic glucose are only stopgaps; they should always be followed by whole blood.

Odell says some obstetricians are overly cautious about exploring the uterus or manually removing the placenta in bleeding patients; this is a mistake, and the patient may pay with her life.

He urges: "In addition to learning to recognize the rare cases of adherent placenta, inversion of the uterus, rupture of uterus and uterine myomata, the doctor will often prevent a fatal postpartum hemorrhage if he learns this operation well. Our residents are instructed to perform manual removal of the placenta whenever the rate of bleeding becomes excessive or if the placenta is retained more than 20 minutes after delivery. During the past year we have advocated a large number of such operations as a teaching procedure. For the months of January and February, 1947, 51 placentas were removed manually out of a total of 681 deliveries. In a recent report Beechman discovered that 12

<sup>1</sup> L. D. Odell, Chicago, in *Ill. Kansas Med. Soc.*, Sept.

out out of a total of 168 women dying from hemorrhage in Philadelphia, expired with the placenta within the uterus, and nothing more than suprafundal pressure was used to control hemorrhage."

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### THYROIDECTOMY FOR NODULAR GOITER WITHOUT ELEVATION OF BASAL METABOLIC RATE

IT IS GENERALLY agreed that operation is indicated for nodular goiter in the presence of pressure symptoms, malignancy, and some types of infection, and the symptoms of hyperthyroidism when accompanied by an increased basal metabolic rate. A number of authorities maintain that hyperthyroidism can be present with a normal or even subnormal basal metabolic rate. Accordingly, they advocate thyroidectomy for nodular goiter associated with signs and symptoms of hyperthyroidism, even though the basal metabolic rate is not elevated. In support of this position Dr. J. A. Buckwalter<sup>1</sup> and his associates cite the experience at the University of Iowa.

A series of 235 cases was considered. Except for a normal or low basal metabolic rate these patients presented the typical picture of hyperthyroidism characterized by nervousness, palpitation, weight loss, increased appetite, etc. It was the practice of the Surgical Service to perform thyroidectomy in such cases, whereas the Medical Service advised against operation. Thus, two reasonably parallel series were obtained for follow-up studies. In all, 374 questionnaires were sent out, to which there were 235 replies. Of the patients operated upon, 59 per cent reported that they were improved, 9 per cent worse, 30 per cent unchanged, and 2 per cent equivocal. Of those not operated upon 8 per cent reported that they were improved, 11 per cent worse, 68 per cent unchanged and 13 per cent equivocal. In brief, thyroidectomy resulted in regression of symptoms, whereas there was little change noted in those patients not operated upon after a period of from one to five years.

*Editor's Note.*<sup>2</sup>—In considering this type of case such conditions as constitutional inadequacy, neurocirculatory asthenia, and psychoneurosis must always be borne in mind. Only with difficulty can they be differentiated from hyperthyroidism.

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## DENTISTRY

J. H. GIBSON, D.D.S., *Editor*, Charlotte, N. C.

### CARIES OF THE ENAMEL

THE ACTION of fixative agents on the hard structures of the teeth has not been given sufficient emphasis, and this lack has led to many misconceptions with regard to solubility and insolubility of enamel in the developing and the erupted tooth. Frisbie and Nuckolls<sup>1</sup> go on with a consideration of tooth decay which is not in agreement with the orthodox belief.

Many have demonstrated penetration of bacteria in caries of the enamel and have also recognized that the disease is not entirely one of decalcification. They consider caries to be a process in which acid decalcification and proteolysis each plays a part. Careful study of the papers of these investigators fails to reveal that they were aware of a complete matrix within the enamel.

One form of caries is evidenced by narrow, irregular tracts which penetrate deeply. Under the higher power of the microscope and with bacteriological stains, these tracts are found to consist of from one to several isolated rods, the cores of the rods being packed with organisms.

In rampant caries of the matrix parts of or entire surfaces become involved with development of multiple irregular channels of dissemination.

The lesion continues to increase in size and depth and ultimately involves the dentin.

The pathology of restricted caries differs in no way from that observed in superficial and deeply penetrating or extensive caries. The lesion produces a brown stain on the tooth surface and the advance of microorganisms into the deeper structures of the enamel causes a degradation of the protein matrix. In the center of this focus and in areas where necrosis is almost complete, there are few organisms. This would tend to indicate that they are in greater abundance at locations where the matrix is first being attacked. The surface of the tooth is intact, and this activity on the part of the various types of organisms is confined within apparently hard enamel. The infection extends from the surface and may spread in all directions from within the enamel, in this way undermining the sound overlying tooth surface.

If this process were one of acid solution resulting from carbohydrate degradation at the site of the organisms, an undermining lesion of this type could not have occurred. An acid solution of the inorganic constituent of the enamel could only appear as a cavity from its inception.

When the lesion becomes advanced it undergoes physical breakdown and cavitation results. In this

1. H. E. Frisbie & James Nuckolls, San Francisco, in *Jl. Dental Research*, June.

broken surface all types of organisms are found to occupy the open cavity. It has been reported that a marked increase in the *Lactobacillus acidophilus* index accompanies cavitation. Cavitation, however, is the end result of the carious process, and the microorganisms operate for varying lengths of time before a break in the surface of the tooth occurs. We agree that the type of the lesion and the rapidity of development is in direct relation to the maturation of the matrix and degree of mineralization of the structure.

We believe that these observations of the carious process operating beneath apparently unbroken and intact enamel surfaces further advance our original hypothesis: that dental caries is fundamentally a degradation of the organic matrix of the enamel resulting from the enzymatic action of microorganisms, rather than a simple acid decalcification and removal of the organic salts.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### EAR, NOSE AND THROAT OFFICE PRACTICE FOR THE GENERAL PRACTITIONER

RUBY<sup>1</sup> suggests procedures by which the G. P. can successfully diagnose and treat a great many ear, nose and throat conditions.

The first complaint is *sore throat*. If the tonsils or pillars are reddened, especially if they are swollen, and the posterior wall of the pharynx is fairly smooth and not dry, cleanse the area with hydrogen peroxide, on cotton, or use a hot alkaline gargle. Follow this with a light massaging of the tonsil area with a cotton swab saturated with tincture of metaphen. The relief is almost magical. If the mouth shows cankered ulceration, sulfa solution or alkaline washes are beneficial. The patient, if nervous, rarely has a HCl-deficiency indigestion, with fermentation acid in the mouth. Then 10-minim doses of dilute HCl. in adequate water, at each meal, often gives surprising results. The same holds true for food allergies. Acidulin pulvules, or dil. H Cl. solution often proves helpful.

If the sore throat shows pillars and tonsils not greatly involved, but the posterior pharyngeal wall red, hot and dry, a garble does not reach the site. Hence, a hot drink, or warm saline down through the nose to the pharynx, followed either by bland oil through the nose, or weak iodine solution in oil or glycerin to the pharynx, on cotton, will give relief. Most of these cases have their origin in the sinuses, and this source of trouble must be considered.

Where the trachea and bronchi have a dry, hot appearance, the aforementioned oil, warm, in the trachea, by long dropper through the mouth, or by a curved syringe, will help.

Most patients with *sinus disorders* have either heavy discharge, blocked breathing (transient or chronic), or pain in and around the head. When the nose is at fault, the diagnosis is aided by finding the pain worse when the head is down, as in tying the shoe. Acute sinusitis requires little but a shrinkage of the nasal tissues to allow drainage and aeration of sinuses. This can be aided by posture or by mild suction. No salt solution should be used in the nose for anything except a chronic dry nose, with crusting. In other cases saline removes the protective mucus, as well as the infection, and leaves the nasal tissues exposed to dust and further infection. In chronic cases sinus openings may have to be freed by mechanical means, in which case the patient should be referred to a specialist. Dripping noses suggest allergy, and efforts should be made to find out whether air-borne, contact, or food allergy.

When the nose contains *greenish crusts*, possibly with rubbery mucoid material in the upper pharynx, the occasional clearing of the nose with a warm saline solution should be followed by one of three treatments: 1) massaging the septum and turbinates gently with 1% iodine in glycerin; 2) spraying with amniotic fluid; or 3) packing with iodized oil. The use of iodized oil (1%), at least twice daily, by the patient, with the oil going well up and back into the nasopharynx, will assist in relieving a very uncomfortable and annoying condition.

*Pain in the head*, especially if referable back from one frontal area to the base of the skull on the same side, and even to the shoulder or arm same side, but unaccompanied by any evidence of pus in sinuses, will very often be relieved by an anesthetic and a decongestant to the anterior tip of the middle turbinate, same side. Rarely is it necessary to fracture a tightly pressing anterior tip by pressure with a cotton-tipped rigid applicator. The results are often almost miraculous.

Lastly, *the ears*. Complaints are pain, deafness, and ringing noises. Pain, if accompanied by tenderness over the sternomastoid muscle, usually indicates involvement of the tube and middle ear. If the pain is in front of the ear, the trouble is usually in the canal; it then hurts to chew. If the pain is over the mastoid, and there is fever and the ear is red, that is a case for a specialist. If the tenderness is matched by tenderness of Ewing's point and there is no fever, the mastoid pain is usually a referred pain. In deafness the canal should be examined for cerumen, and the drum examined for retraction and color. Ringing and noises are also re-

1. F. McK. Ruby, Union City, in *Jl. Indiana Med. Assn.*, Sept.



ferable to a specialist. The prognosis for relief is usually poor.

In external otitis, or pain in the canal, the canal should be cleansed with peroxide on a cotton applicator, wiped dry, and then packed with a  $\frac{3}{8}$ -inch gauge strip saturated with rubbing alcohol or salusal (an acetie ether compound). If there is itching, use alcohol, and then swab with plain or carbolyzed vaseline to soften the skin.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### THE INTENSIVE TREATMENT OF EARLY SYPHILIS

ALL OF US need and desire to know the best means of dealing with syphilis. All of us realize that the treatment offering most of good is the intensive, early treatment.

A recent report<sup>1</sup> of treatment of 500 patients will be read with eager interest.

On December 1st, 1944, the following plan of treatment was started and has been used for the first 500 patients. For 10 days each patient received a daily intravenous injection of 34 mg. of dichlorophenarsine hydrochloride (phenarsine), and on the first, third, seventh and 10th days, two grains of bismuth subsalicylate were injected intramuscularly. The penicillin dosage varied as more penicillin became available for civilian use. The first 100 patients received intramuscular injections of 10,000 units q. 3 h. for a total of 600,000 units; the second 100 patients received 20,000 units q. 3 h. for a total of 1,200,000 units; and the third, fourth and fifth 100 patients received 40,000 units q. 3 h. for a total of 2,400,000 units.

Quantitative blood tests for syphilis are made and the treatment as outlined started. After the patients have completed the 10-day treatment they are discharged to the Central Diagnostic Clinic with instructions to report to the Clinic once a month for one year. At each return they are examined, and on each visit quantitative blood tests are performed. On the sixth month after treatment a spinal fluid examination is ordered. After one year of negative serologic tests they report to the clinic q. 1 mo. for the second year, and it is planned to have them return to the clinic q. 6 mo. in the third year, and once a year thereafter. If and when any patients show signs of any type of relapse or fail to respond to treatment, readmission to the treatment center is advised and the course of treatment is repeated.

The first 500 patients comprise 316 Negroes—165 of these females; and 184 whites—79 females.

1. B. A. Goldman *et al.*, Pittsburgh, in *Penn. Med. J.*, Aug.

Patients 1-100 (treated with phenarsine, bismuth and 600,000 units of penicillin)—of 51 who were followed for six to 18 months; 39 are seronegative, 13 relapsed and 2 are seroresistant.

Patients 101-200 (treated with phenarsine, bismuth, and 1,200,000 units of penicillin)—Of 39 followed for 6-12 months; 32 are seronegative, four relapsed, three seroresistant.

Patients 301-400 (treated with phenarsine, bismuth, and 2,400,000 units of penicillin)—Of 42 followed for 6-12 months; 29 are seronegative, 2 relapsed, eight are seroresistant.

Patients 401-500 have been treated too recently for comparative statistical evaluation of the results of therapy.

There were no fatalities.

Thirty-two patients were given calcium penicillin in oil and beeswax (300,000 units), once a day, intramuscularly, instead of the third-hour injections of saline solution of penicillin. Phenarsine and bismuth were injected routinely according to the 10-day schedule. These patients were ambulatory and reported to the treatment center every morning, for 10 consecutive days—18 of these patients are seronegative or show a steady reduction in titer at this time. One, treated for seronegative primary syphilis, 5 months later returned with a new chancre, darkfield positive and a strongly positive quantitative STS. This was considered to be a cutaneous and serologic relapse, and is the only relapse in this group to date. No patients in this group were seroresistant to treatment.

Recently we have changed the treatment routine in this group of patients by increasing the penicillin dosage to 600,000 units daily; 300,000 units are injected intramuscularly each morning and evening for 10 days, totaling six million units of penicillin. Phenarsine and bismuth are injected according to the regular treatment schedule. The patients' only complaints thus far are of soreness and discomfort in the gluteal muscles.

### TULAREMIA TRANSMITTED IN MANY WAYS

TULAREMIA was first reported as transmitted almost exclusively by rabbits. Ten years ago transmission by more than a score of animals and insects had been reported, although the cottontail rabbit, jack rabbit and snowshoe hare were implicated in over 90 per cent of human cases in the United States. Additional reports since that time have described transmission of the disease to man by the pheasant, grouse, horned owl, chicken hawk, beaver, raccoon, dog, fox, squirrel, snapping turtle, ground squirrel, mouse, and the gull. Transmission from animal to animal and from animal to man is known, but no instance of transmission from man to man has been reported.

Human infection through the handling of cold-blooded animals has been described as incurred in the skinning of a bull snake, from the fin prick of a catfish, resulting in a small wound on the palm of the left hand with onset of symptoms five days later. Rabbits with "rabbit fever" had been seen to fall into the river and numerous rabbit carcasses were noted in the water.

With this introduction, Falk<sup>1</sup> proceeds to report an instance of transmission by fish fins. This patient was not recognized as having tularemia for some two weeks. Then streptomycin 0.2 grams intramuscularly every three hours for seven days (a total of 9.9 grams) was given. Improvement was shown on the second day of treatment, temperature normal in four days and did not recur.

Falk is one of the many who now look upon streptomycin as a specific in the treatment of tularemia.

1. Abraham Falk, Minneapolis, in *Minn. Med., Aug.*

## HISTORIC MEDICINE

### THE SURGICAL HISTORY OF A CENTENARIAN

TWO MINNEAPOLIS DOCTORS<sup>1</sup> report on care, on four hospital admissions, of a man from his 98th to his 104th year. The report will encourage doctors to persist in undertaking to relieve pain and prolong life however old the patient.

The patient, 98, was first admitted to the Minneapolis General Hospital on August 24th, 1941, with the diagnosis of strangulated right inguinal hernia. He had worn a truss for bilateral inguinal hernia for many years. Two years before he had a mild heart attack but otherwise had been in good health.

A well-developed, well-nourished white man, teeth excellent, abdomen not distended, but a very tender small mass over the right internal inguinal ring; b. p. 168/72. Only other abnormal findings were a small inguinal hernia on the left side and a hydrocele on the right. On the day of admission the hernia was reduced by gentle taxis without anesthesia. In the hospital three days; home feeling well.

Second admission—age 99. Diagnosis strangulated right inguinal hernia.

Pain in rt. abdomen four days, anorexia several days, no bowel movements during that time, intermittent vomiting for 36 hours. Abdominal tenderness, most marked in the rt. lower quadrant, severe abdominal distention, and a tender firm mass in the right inguinal region; t. 99. Blood and urine normal save for signs of dehydration. Diagnosis small bowel obstruction due to strangulated rt. inguinal hernia. With an ilio-inguinal nerve block.

1. D. J. Moes & J. V. Farkas, Minneapolis, in *Minn. Med. July.*

herniotomy; sac contents included necrotic omentum, 14 cm. loop of strangulated small intestine.

The int. ing. ring was incised to allow return of circulation to affected portion of bowel. The necrotic omentum was resected; the loop of ileum wrapped in warm saline packs for 10 minutes, after which it began to resume a more normal appearance, except one portion, 3 cm. long and 2 cm. wide, which improved in color, but in which peristalsis was very poor. However, because of the extreme age and poor condition of the patient, it was decided not to resect the damaged bowel. As an alternate procedure a portion of the peritoneum from the hernial sac was used as a free graft to cover the area, the peritoneum being attached to the intestine with interrupted cotton sutures. A modified Bassini repair was effected, using interrupted sutures of 35-gauge stainless steel wire.

Postoperative course was complicated by ileus, treated by duodenal suction and by restoration of a normal fluid and electrolytes. On the second postoperative day, and daily thereafter, he was allowed out of bed in a chair. Signs of mild bronchopneumonia developed on the third day; t. 99-103 for the first 10 days, then gradually returned to normal. A slight amount of purulent material drained from the operative wound, but the incision was completely healed at discharge October 6th, 1942.

Third admission, age 100, on March 15th, 1943, diagnosis a possible head injury with lacerations of the scalp.

Found lying in the street somewhat dazed, apparently having fallen on the icy pavement; scalp laceration 3.5 inches long in the left parietal region, somewhat irrational but not unconscious. A well-healed right inguinal operative scar. B. p. 148/100; p. 100. Neurological examination negative except for mild confusion. The laceration of the scalp was cleansed and repaired. March 18th, lumbar puncture, spinal fluid normal. Roentgenograms of the skull showed no evidence of fracture. Ambulatory, course satisfactory until March 20th when he complained of pain in the left groin. A tender mass, 7 cm., in the left inguinal region which clinically appeared to be a direct ing. hernia, irreducible.

One-per cent procaine solution was used, and a strangulated, sliding-type of hernia, 6 by 8 cm. found, a part of the sigmoid colon. After incision of the constricting band, no impairment of circulation of either the large bowel or the mesocolon persisted. Orchidectomy, in order to obtain a more firm repair.

Out of bed the first day; fourth day t. rose to 104, signs of left pulmonary atelectasis, treated by inhalation of 20% CO<sub>2</sub>, with manual compression over the left side of the thorax. Expectored a

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## HOW THE BUREAUCRATS AT WASHINGTON TRIED TO RAM THROUGH THE BILL FOR SOCIALIZED MEDICINE

THE COMMITTEE on Expenditures in the Executive Departments reported some time ago to the Speaker of the U. S. House of Representatives on its investigation of indecent and illegal pressure by various agencies of the Government to have the Wagner-Dingell bill pushed through.

It finds that at least six agencies in the Executive Branch are using Government funds in an improper manner for propaganda activities supporting compulsory national health insurance.

The departments, bureaus, and agencies known to have participated in this campaign are:

1. The United States Public Health Service
2. The Children's Bureau
3. The Office of Education
4. The United States Employment Service
5. The Department of Agriculture; and
6. The Bureau of Research and Statistics, Social Security Board.

Your committee finds that the use of Federal funds for the purpose of influencing legislation before Congress is unlawful. We have, therefore, brought these matters to the attention of the Department of Justice, with a request that the Attorney General at once initiate proceedings to stop this unauthorized and illegal expenditure of public moneys.

The first meeting in furtherance of these health workshops was held in Washington on November 2nd, 1945. At that meeting only ten persons were present, all of them full-time employees of the Federal Government.

The latest figures available from the Budget Bureau show that for the fiscal year 1946 total expenditures in the executive branch for publicity and propaganda activities were \$75,000,000. During that fiscal year 45,000 Federal employees were engaged, full or part time, in such activities, an increase of 300 per cent in Federal expenditures for publicity and propaganda in a period of five years, is deemed by your committee to be a proper subject for inquiry by the Congress.

It will be the purpose of your committee, in future interim reports, to examine this expenditure in detail by departments and agencies, with particular reference to illuminating those activities which are directed primarily to influencing the decisions of Congress on pending legislation.

The Surgeon General, U. S. P. H. S., wrote a letter in 1945 to his subordinates which referred to the President's message as a "subject of the highest importance to every citizen." Quoting from this letter:

"The appropriate executive agencies of the Government have been specifically instructed by the

President to assist in carrying out this legislative program as presented to Congress on September 6th, 1945."

The "legislative program" referred to was the Wagner *et al.* bill.

Your committee has a report from the General Accounting Office, showing that various Federal agencies paid out a total of \$1,950 in traveling expenses of Federal employees to and from the Jamestown Health Workshop. This conference took 18 Federal officials away from their desks for a total of 126 man-days.

It finds that the Federal Government paid almost \$5,000 in traveling expenses of Federal employees for the series of five health workshop conferences and planning meetings held throughout the country before our investigation began.

Under date of May 14th, 1947, Mr. Isadore Falk, Director of the Bureau of Research and Statistics, sent a memorandum to the Acting Commissioner for Social Security, urging that one Jacob Fisher, a member of Mr. Falk's staff, be sent to New Zealand at Government expense, to study compulsory health-insurance programs and activities in that nation.

We find that this same Jacob Fisher has been documented by the House Committee on Un-American Activities for almost uninterrupted association, since 1939, with various Communist-front and fellow-traveler organizations in the United States. At various times, according to his record, Jacob Fisher has been identified with seven different groups or organizations avowedly sponsoring the Moscow party line in the United States.

Suffice it at this time for your committee to report its firm conclusion, on the basis of the evidence at hand, that American communism holds this program as a cardinal point in its objectives; and that, in some instances, known Communists and fellow-travelers within the Federal agencies are at work diligently with Federal funds in fur-

therance of the Moscow party line in this regard.

These are only a few paragraphs from the report. Write your Congressman for the whole of it.

These meetings purported to be held to learn what the public opinion was; they were held to manufacture opinion. Only those were invited to attend who were known or thought to be in favor of Senator Wagner's bill. Representative doctors were not invited.

Are we doctors going to endorse by our votes the kind of political activity which this committee has brought to light?

## EDUCATION FOR GENERAL PRACTICE NEGLECTED IN BRITAIN ALSO

In the issue of the *British Medical Journal* for September 6th the editor of that great medical periodical complains that, although the majority of medical students are destined to become general practitioners, there is much wrong with the British method of education for general practice. Many who have gone into general practice, says he, look back upon their student days and ask themselves: "How far did my training go in preparing me for the job I am now doing?"

This, and what he says further, is just as applicable to medical education in this country.

The general practitioner cannot help recalling the dreary hours he spent peering through a gap in somebody's armpit at an operation he would never be called upon to perform; of the time he spent listening by the bedside to a physician learnedly discoursing on the differential diagnosis of an obscure neurological case with an incidence in the population of one in many thousands. And, to go a little further back in his education, he will recall his efforts to memorize the relations of the posterior triangle of the neck and the branches of the internal carotid artery. In general practice, we are told, something like a third of the patients are suering from psychological disturbances. Faced with patients who are anxious and hypochondriacal the general practitioner looks back into his medical education for guidance and can recall only dramatic visions of patients with advanced general paresis and such other museum specimens.

With the growth of specialization and the tendency to elect to teaching hospital staffs men who are specialists rather than general physicians the remoteness of the teachers of medicine from the problems of general practice becomes greater rather than less. A cardinal difficulty in the education of the majority of medical men is that those who go into general practice are educated by specialists. The idea of apprenticeship is returning, an expression of awareness of this difficulty.

Our own journal has, time after time, presented the case from this same viewpoint, at least once

### From P. 342

large amount of grayish mucus. Steady improvement and t. receded; up each day. The skin clips were removed on the sixth postoperative day and the wound was found to be healing by primary intention. Discharged May 3rd, in good health, no complaints, wounds well healed.

Fourth admission—age 102, October 7th, 1945. to the neurological service with a diagnosis of cerebral apoplexy, unconscious, entire left side flaccid paralysis; b. p. 190/80, normal blood and urine findings. Well-healed herniorrhaphy scars with recurrence.

Despite 620,000 units of penicillin between Oct. 15th and 20th, for pneumonia which had developed, he expired on November 27th, 1945.

urging that every medical school in the land have for Dean a general practitioner. It sees no other way of providing good medical and surgical care at a cost that we can pay, whether payment be made individually or collectively. And it insists again that it is not only unnecessary, it is impossible, to provide hospital care in every case of sickness; that the place for the vast majority of sick folks is in their own beds.

### A NEW HOSPITAL FOR NEGROES IN SOUTHSIDE VIRGINIA

In these days of looking to some governmental agency, even as far as Washington, for the provision of medical care, it is encouraging to learn that funds for a new hospital in a neighboring state have been raised and the hospital brought almost to completion on the community self-help principle.

This hospital comes of the dreaming and laboring of Rev. Murray Jeffress, born in Virginia's county of Charlotte, in which the minister has spent 73 years. In his young manhood he realized the great need of a hospital in his Southside for his people; and hopefully, patiently and earnestly he has labored till the need is on the verge of being met.

The hospital will be a nonprofit institution, for the treatment of Negroes from Charlotte and neighboring counties. It is being built by contributions, principally from members of the Grand United Order of Moses, a fraternal insurance organization founded by Preacher Jeffress, but its charter is drawn in such a way that the hospital will be an independent, locally operated institution.

The building will have ten rooms and nine wards, when in full operation, and each of these wards can hold six patients. It will be opened on a smaller scale, Rev. Jeffress said, as a 27-bed hospital with one doctor and one dentist in attendance.

Because so many of the members of the Grand United Order of Moses contributed to the hospital, the institution will be called "Moses General Hospital," but fraternal membership will have no relation to the giving of hospital care.

He hasn't waited to get the full amount needed for the hospital before beginning the building, Rev. Jeffress explained.

"I wanted people to be able to see what their money was doing," he said slowly, "so we built it as we could go along. That way, they realize what a good thing it will be."

The Negroes, under the leadership of this wise and good preacher of theirs, have shown us of the more numerous and wealthy race a better and less expensive way of meeting our local hospital needs than that which we are undertaking.

When the folks in any locality are paying their own dollars directly for the carrying out of any project, they want to see what their money is doing. They should realize that money ladled out from Washington is only our tax money sent back to us heavily discounted and with many strings tied to it.

### FOR THE SAFETY OF SLEEP-WALKERS

TWO OR THREE times recently some mention has been made in the medical journals of sleep-walking. So far as I have seen no suggestion has been made anywhere as to how to keep a sleep-walker from falling or injuring himself in some other way. It seems the common idea that a person walking in his sleep can set at defiance various of the laws of physics, and suffer no harm.

A dozen years ago one of the best doctors in this city walked out of a second-story French window in his sleep and was found dead in the snow next morning. I know of an elderly widow of a doctor in another State who did the same thing with fatal result. Within the past few days a patient of my own, while sleep-walking, fell and hurt himself quite severely. It is a wonder that he didn't break an arm or a leg.

If sleep-walkers cannot sleep on the ground floor (and even then it would be well enough to take the precaution), why will they not, with a small leash, fasten a wrist to the bedstead?

### THE EARLY DIAGNOSIS OF CANCER OF THE OESOPHAGUS AND STOMACH

WE KNOW CANCER is the chief cause of death in men and women in the years after 40. We know that at first it is not a tumour but an insensible transformation of the cells in some part of the body to a structure that is a caricature of the normal rather than something new or different; that this new tissue has no nerve supply, and that it produces no inflammatory reaction in the normal parts surrounding it—in other words, that it is entirely painless, and in most cases entirely symptomless.

With this arresting statement, a famous British surgeon<sup>1</sup> opens a discussion of ways of finding out sooner about the development of these fearful diseases.

The whole article is so impressive that its author is quoted freely and at length.

Among his most striking statements:

Cure of esophageal cancer is almost unknown. Cure of gastric cancer is seen in not more than five per cent of those cases that come to a surgical clinic; yet it is the chief cause of cancer deaths in all civilized countries. Are there any signs or symptoms which should raise our suspicions and allow us to start those investigations that will give the answer in time?

We should all "stand to" over our patients who have passed the 40 mark, suspicious of the enemy who may even then have established a footing unknown. We should beware of the man who starts to look ill, to get a little paler, to lose weight, to

1. Sir Heneage Ogilvie, in *Brit. Med. J.*, Sept. 13th.

## BOOKS

**PRACTICAL CLINICAL PSYCHIATRY**, by EDWARD A. STRECKER, A.M., Sc.D., Litt. D., LL.D., M.D., Professor of Psychiatry, School of Medicine, University of Pennsylvania; FRANKLIN G. EBAUGH, A.B., M.D., Professor of Psychiatry, University of Colorado School of Medicine; JACK R. EWALT, M.D., Professor of Neuro-Psychiatry; Director, Galveston State Psychopathic Hospital, University of Texas Medical Branch. Section on Psychopathologic Problems of Childhood by LEO KANNER, M.D., Associate Professor of Psychiatry, Johns Hopkins University School of Medicine. Sixth edition. *The Blakiston Company*, 1012 Walnut St., Philadelphia 5. 1947. \$5.00.

Previous editions of this work were distinguished for the clearness of presentation of the different problems of clinical psychiatry and for the encouragement to doctors other than psychiatrists to undertake the care of a great proportion of the psychiatric cases which developed in their own practice. The sixth edition follows the same plan, the worth of which is attested by the fact that this text of psychiatry has reached more editions already than has any previous such text.

This popularity has not been confined to any class of readers. It is general among medical students, nurses, social workers and practitioners of medicine in all its departments. The present edition will meet the demand so tremendously increased by the experiences of the late war for authoritative information on psychiatric problems and their treatment.

**GIFFORD'S TEXTBOOK OF OPHTHALMOLOGY**, by FRANCIS H. ADLER, M.D., Professor of Ophthalmology, University of Pennsylvania Medical School. Fourth edition. 512 pages, with 310 illustrations. *W. B. Saunders Company*, Philadelphia and London. 1947. \$6.00.

The present reviser says that this revision of Gifford's text has been made in accordance with the original purpose of the book, to provide a text on ophthalmology which would be of value to the medical student and to the physician not specializing in this field. He recognizes that it has become imperative to reevaluate what the medical student should be taught, that he should not be asked to study details and techniques for which he will have no use in his daily work. He conceives that ophthalmology's great value to every physician is a reason for presenting here matters carefully selected with the need of the student and non-specialist in view. There is a special emphasis on the relation of the eye to general medicine and neurology. The author says that there are certain diseases of the eye which the general physician may safely treat. He gives the details of the treatment of such conditions and the indications which should prompt him to direct the patient to seek more expert advice.

It is not too much to say that the reviser has

well carried out this intent, and provided a superior text.

**CALCIFIC DISEASE OF THE AORTIC VALVE**, by HOWARD T. KARNER, M.D., and SIMON KOLETSKY, M.D., Institute of Pathology, Western Reserve University and the University Hospitals of Cleveland. *J. B. Lippincott Company*, E. Washington Square, Philadelphia 5. 1947. \$5.00.

A review of pertinent literature serves as an introduction to the description of complete examination of 200 subjects coming to autopsy. The findings are presented and a statistical analysis of the data, including the predisposing factors of rheumatic heart disease, the clinical features of hypertrophy, arteriosclerosis of the proximal aorta, stigmas of rheumatic heart disease, and finally clinico-pathological consideration.

The author's claim that the report presents the truth in so far as current methods and materials permit, and that it brings up-to-date an important and neglected subject admits of no dispute. It is a unique work of great value.

**STEREOSCOPIC ATLAS OF NEUROANATOMY**, by H. S. RUBINSTEIN, M.D., Ph.D., Director of the Alfred Ullman Laboratory for Neuropsychiatric Research, Sinai Hospital, Baltimore, and C. L. DAVIS, M.D., Professor of Anatomy, School of Medicine, University of Maryland. *Grune & Stratton, Inc.*, 381 Fourth Avenue, New York 16. 1947. \$10.

A preliminary booklet is devoted to dissection of the brain.

This Atlas proper consists of 43 plates illustrating in stereoscopic photographic form certain brain structures which have been found useful by the authors in the teaching of Neuroanatomy, all the way from embryologic consideration to considerations of the structure and function of the fully developed nervous system. Gross embryologic development is first illustrated, later plates showing the typographical features of the adult brain, and then, step by step, are shown the various stages of the dissections.

The Atlas has been prepared with the special needs in view of undergraduate students, of physicians making special studies in neuropsychiatry, and of those preparing for examinations of the American Board of Psychiatry and Neurology.

**SKIN MANIFESTATIONS OF INTERNAL DISORDERS (Dermadromes)**, by KURT WIENER, M.D., Dermatologist, Mount Sinai Hospital, Deaconess Hospital, Saint Michael's Hospital, Milwaukee. With 386 text illustrations and six color plates. *The C. V. Mosby Company*, St. Louis. 1947. \$12.50.

The author recognized that physicians have long been interested in skin manifestations of deep seated diseases and the value of evidences afforded by the skin and its appendages in arriving at diagnosis of internal conditions. He calls attention to the fact that in former times clinicians had more knowledge

of how to diagnose and prognose from skin signs than have the physicians of today. It is with this thought in mind that this book has been prepared.

It is truly remarkable how many disease conditions—systemic, and primarily of certain body systems or organs—frequently manifest themselves to the observant eye and the well stored mind by changes in the skin. The careful reader will be richly rewarded.

THE SELECTED WRITINGS OF BENJAMIN RUSH, edited by DAGOBERT D. RINES. *Philosophical Library, Inc.*, 15 East 40th Street, New York City 16. 1947. \$5.00.

Benjamin Rush was a great man and, like most other great men, he was extremely versatile. He was the foremost physician of his time in this country and many were his medical writings. The present volume touches on medicine only incidentally. Here he deals with slave keeping, the defects of the Confederation, securities for liberty, capital punishment. There are five essays on education, one of them offering a plan of a Federal university. There are lectures on animal life, on the influence of physical causes upon the moral faculty, on manias, on phobias; on the duties, vices and virtues of physicians. Under the heading On Miscellaneous Things he treats of the influence of the Revolution, the effects of ardent spirits, on old age, exercise, manners, directions for conducting a newspaper, and the benefits of charity.

However poor a good many of Rush's conclusions have turned out to be, you may depend on it that he had a good reason for each one; and by no means all of the conclusions were poor. The book makes entertaining and instructive reading.

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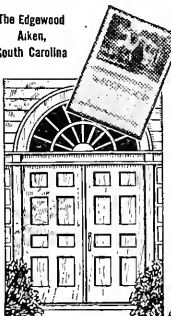
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## Have a Coke



*The pause that refreshes*

**A TEXTBOOK OF CLINICAL NEUROLOGY**—With An Introduction to the History of Neurology, by ISRAEL S. WECHSLER, M.D., Clinical Professor of Neurology, Columbia University, N. Y.; Neurologist, The Mt. Sinai Hospital; Consulting Neurologist, Montefiore Hospital and Rockefeller State Hospital, N. Y. Sixth edition, 829 pages with 162 illustrations. W. B. Saunders Company, Philadelphia and London, 1947. \$8.50.

The author reminds that 20 years ago the first edition of this textbook was published, that the four years since the last revision appeared have been years of notable progress, and so it became an imperative duty to bring the text up to date. Another reason he offers for renewed emphasis on the knowledge of the structure and function of the nervous system in health and disease is that this knowledge is of the greatest importance for psychiatry and internal medicine as well as for neurology.

The chapter on psychometric tests is entirely new and under a new title, psychological diagnosis.

The old well-established procedure—from history to neurological examination, to psychological diagnosis—is followed. Then disease conditions of different anatomical divisions, then the neuroses. The book is well balanced, satisfying in what it includes and what it excludes and clear and definite in its descriptions and recommendations.

**PHARMACOLOGY, THERAPEUTICS AND PRESCRIPTION WRITING**—For Students and Practitioners, by WALTER BASTEDO, Ph.G., Ph.M. (Hon.), M.D., Sc.D. (Hon.), F.A.C.P.; Consulting Physician, St. Luke's Hospital, N. Y.; St. Vincent's Hospital, Staten Island, and the Staten Island Hospital; President, U.S.P. Convention 1930-40; Member Revision Committee, U.S.P. Formerly Curator of the N. Y. Botanical Garden; Attending Physician, City Hospital, N. Y.; Instructor in Pharmacology, Cornell University; Associate in Pharmacology and Therapeutics and Assistant Clinical Professor of Medicine, Columbia University. Fifth edition. 840 pages, with 82 illustrations. W. B. Saunders Company, Philadelphia and London, 1947. \$8.50.

The rapid changes in the use of remedial agents long established, and the great number of new agents being constantly introduced, makes it essential that textbooks of pharmacology and therapeutics be revised frequently. Bastedo's textbook has been discharging this function for a third of a century. The present edition keeps up the fine record of its predecessors in sifting wheat from chaff and exercising wise discrimination in passing on the claims and evidence for therapeutic agents now being offered us.

#### A STATISTICAL STUDY OF POLIOMYELITIS IN RELATIONSHIP TO TONSILLECTOMY

(P. M. Pedersen, San Francisco, in *Dig. Ophthal. & Otolaryn.*, Oct.)

The majority of cases of poliomyelitis in the 492 cases covered in this series occurred between the ages of two and nine; greatest number at age eight. June produced 36 cases; July 73; August 79; September 80; October, 81;

November 71, and the number in December fell to 24.

Of the total of 492 cases, there was a total of 11 cases of poliomyelitis following tonsillectomy within a two-month period. The longest interval between operation and onset of poliomyelitis was 60 days, the shortest seven days. There were six cases of bulbar and bulbospinal type of poliomyelitis following tonsillectomy, four cases of the spinal type and one case unknown by type. There were no deaths in this series following tonsillectomy within 60 days.

It is apparent that the incidence of poliomyelitis following recent tonsillectomy is not greatly out of proportion to the ratio of disease to the general population during an epidemic year.

#### INJECTION TREATMENT FOR POISON IVY NOT FAVORED (J. R. Allison & A. M. Rubinowitz, Columbia, in *Jl. S. C. Med. Assn.*, Sept.)

The ordinary commercial preparation of poison ivy, which is usually given in four treatments intramuscularly during the acute attack, is contraindicated. There are three reasons for this conclusion: First, if they are strong enough to have any action, they will cause an acute exacerbation of the dermatitis. We have seen patients with acute poison ivy made worse simply by patch tests, which certainly do not add as much poison ivy extract as when given with the commercial preparation intramuscularly. Second, if it is given with the idea of desensitizing the patient during the acute and allergic attack we should not attempt desensitization. Third, in a great many cases of dermatitis venerea in which poison ivy extract is given, the dermatitis is not due to poison ivy, but to some other plant or weed.

#### POLIOMYELITIS CAN BE DIAGNOSED WITHIN 24 HOURS OF ONSET

(Edi. in *Jl. Med. Jl.*, Sept.)

Diagnosis of infantile paralysis can usually be made within 24 hours of the onset of the disease, according to John F. Phol, M.D., of Minneapolis, and treatment should begin immediately in order to relieve discomfort and minimize crippling.

Symptoms of the first 24 hours are: headache, fever, nausea, vomiting, loss of appetite, stiff neck, stiff back, painful arms and legs and general malaise and listlessness.

PROSTATIC CANCER is suggested by an acid serum phosphatase level of five to 10 units and is practically certain if the serum level rises above 10 units. Advanced Paget's disease may also give a high serum acid phosphatase value but is usually readily distinguished by a coexisting extremely high alkaline phosphatase level.—*Practitioner*.

U. S. VITAMIN CORPORATION, New York, has just made available a new preparation, Methischol capsules and syrup, for the prevention and repair of liver damage and injuries. The company states that Methischol combines drugs which have provided dramatic results in liver conditions often considered hopeless. U. S. Vitamin Corporation claims several advantages for Methischol . . . (1) supplies three lipotropic agents—choline, inositol and methionine—believed to be specific for the prevention and repair of certain types of liver injury . . . (2) furnishes liberal amounts of the natural vitamin B-complex concentrated from liver . . . (3) provides essential methionine, a readily absorbed and utilized amino acid factor necessary for liver repair . . . (4) is well tolerated, non-toxic, free from side-reactions, with dosage easily controlled.

Detailed literature is available from the U. S. Vitamin Corporation, Casimir Funk Laboratories, Inc. (affiliate), 250 East 43rd Street, New York 17, N. Y.



From P. 345

turn down the second game of golf or the last rubber at bridge, to miss his second helpings, and to become choosy about his diet. The mind or body of a healthy man does not tire *suddenly* be he 40 or four-score. Habits of meals and bowels do not change without reason; but it is the neurotics who look at their faces and tongues daily in the mirror and weigh themselves weekly, and with normal men we have to rely on our own observations or the reports of their wives or friends. Have they noticed any difference in the fit of their clothes? Can they do all the things they did six months ago? Is there any alteration in their appetite, the amount they can eat at a time, their bowel habit? Have they started to suffer from wind lately? Some men are windbags all their lives, but one who starts suddenly to belch or rumble probably has cancer. Have they for the first time taken to powders or medicine?

We keep our suspicions to ourselves, for we do not wish to earn a name for being alarmists or to involve our patients in needless expensive investigations, but we must keep a constant watch on the deviation we have noticed, and we should start a weight chart. Cancer is progressive; the paleness increases, the tiredness gets worse, the weight continues to fall. And there are certain tests we can carry out without revealing our suspicions. If we suspect carcinoma of the esophagus we can order a bulky cachet of "medinal" and aspirin and stand by while they swallow it; if carcinoma of the stomach we can ask them to share a bulky meal. And we can put them on a meat-free diet and have a stool examined for blood; a negative result makes a cancer anywhere in the alimentary tract very unlikely. But if symptoms continue and progress, if we see that slight but steady deterioration that whispers "cancer" to the trained eye, we must insist upon a complete investigation. We may be wrong, but if we always wait till we are right we shall always be just too late. A live mistake is better than a dead certainty.

Cancer of the esophagus is hardly ever diagnosed till it is well advanced, for it is insensible and uncomplaining, usually till it has completely encircled the lumen.

Questions to doctors friends have revealed only three observations with any bearing on the subject: 1. That there is occasionally some esophagitis above a non-obstructive growth, giving a feeling deep in the throat "as if they have swallowed some very hot tea." 2. That a partial obstruction may suddenly be complete to some usually large bolus, so that patients come with a story of a bone stuck in the throat. Both stories call for x-ray examination and esophagoscopy. 3. That the early dysphagia of a slightly stenosed growth is often reported

as indigestion, which leads to investigation by a barium meal and a report of a normal stomach that allays suspicion until too late. It should be the rule at every barium meal that the first swallows are watched in their passage down the esophagus.

Very many cancers of the stomach are entirely silent till their terminal stages. A celebrated American gastric radiologist swallowed a cup of barium to try out a newly installed apparatus; the film, to the horror of the radiographer who developed it, showed a large gastric carcinoma. Within the last five years two very famous surgeons have suddenly discovered they had a carcinoma of the stomach by feeling the mass bump against the operating table. A barium swallow may appear to pass normally down the esophagus, and if it is not followed by a barium meal a growth in the stomach may be missed. Growths near the fundus are very difficult to demonstrate radiologically, and unless the fundus is examined with the patient in the Trendelenburg position, so that the barium fills the whole cardiac region, small irregularities cannot be seen, and even large ones may pass unnoticed. In many cases the barium is held up at the lower end of the esophagus, but as the constriction is smooth and funnel-shaped a diagnosis of cardiospasm is made. This is one of the commonest mistakes in gastrointestinal radiology, and one of the most tragic, for while the patient is being treated with bougies, or running the whole gamut of psychological investigation, the growth below the diaphragm is passing insidiously from the operable to the inoperable stage. A diagnosis of cardiospasm should never be made in an adult with a short history till the possibility of a high gastric cancer has been excluded.

Early diagnosis, once more, is the reward of a suspicious mind. Investigation means observing these doubtful cases closely and anxiously, inquiring about appetite and comfort at meals; and whether they have a smelling gas—two symptoms highly suggestive of carcinoma; it means weighing them weekly, examining their blood and their stools, testing their vomit for free hydrochloride acid and blood; if suspicion continues it means a barium meal, and if the barium meal is inconclusive it means gastroscopy.

One of the most important services that gastroscopy can perform is to decide whether a particular ulcer is innocent or malignant.

Authorities vary greatly in their estimate of the number of ulcers that become malignant. This surgeon believes that the number is very low indeed; in 20 years he has never seen a gastric ulcer become malignant. Cancer mimicking ulcer, on the other hand, is seen by every surgeon several times a year. Cancer of the stomach, while it is usually a very rapid disease, may go on for 10 years with

little change; the patient may have a good appetite and free hydrochloric acid, lose symptoms from time to time and put on weight on a suitable diet; and at operation or necropsy, may have very much the appearance of an indurated peptic ulcer. If we go into the history carefully, we find that the gastric symptoms have started late in life, that though they may have gone for some years they have been slowly progressive, and that the remissions have not been periods of complete health but of lessened discomfort.

A large chronic gastric ulcer causes constant misery even if it does not cause cancer, and gastrectomy is one of the most satisfactory and, in practised hands, one of the safest operations in surgery.

The early diagnosis of cancer in any internal organ depends, in the main, on clinical judgment, on the early confirmation of what can, in most cases, be no more than a suspicion. When cancer is in question we should accept the negative warning of a penny weighing-machine in preference to the positive reassurance of the 10-guinea Harley Street expert. And if our suspicions continue, if the weight continues to fall, we must insist on an exploration. There is more rejoicing in heaven over the one laparotomy that fails to find cancer than over the 90-and-9 (positive ones) that find it too late.

Every one of us may learn something from this earnest plea for a greater degree of suspicion of cancer of these parts, from greater care in following up symptoms not at all specific in themselves and from never accepting negative reports as conclusive while the patient continues to go downhill.

## NEWS

### NEW FOUNDATION FOR MEDICAL STUDIES

A medical foundation, supported by a medical clinic, like the famed Mayo Foundation has been established at Albuquerque, N. M.

One of the founders is Dr. W. Randolph Lovelace, II, surgeon famed for his high-altitude studies. His uncles, Dr. William Randolph Lovelace and Dr. Edgar T. Lassetter, are other founders of the new medical center. These two 25 years ago founded the Lovelace Clinic. With their nephew, they have now given the physical assets of the clinic, valued at \$1,000,000, and its good will and name to the new foundation, which will be known as the Lovelace Foundation for Medical Education and Research. The clinic will operate henceforth as a voluntary association of salaried physicians under a board of governors. Its income in excess of operating expenses will go to support the foundation.

Study of the apparent beneficial effects of Albuquerque's climate on arthritis, sinusitis and diseases of the chest, expansion of the clinic's cancer-detection and treatment service, and research in aviation medicine will be major interests of the foundation.

A basic function of the foundation will be the awarding of fellowships enabling young doctors to take postgraduate training at the clinic in preparation for recognition as qualified specialists. The elder Dr. Lovelace is a member of the group that founded the American Board of Surgery.

### NOTICE

The American Academy of Allergy will hold its annual convention at Hotel Jefferson, St. Louis, December 15th-17th, inclusive. All physicians interested in allergic problems are cordially invited to attend the sessions as guests of the Academy by registering without payment of fee. Papers will be presented dealing with the latest methods of diagnosis and treatment as well as the results of investigation and research. Round table conferences will be held on Monday afternoon, December 15th. Advance copies of the program may be obtained by writing to the Chairman on Arrangements, Charles H. Eyermann, M.D., 634 North Grand Boulevard, St. Louis.

DRS. R. H. LAFFERTY and O. D. BAXTER, Charlotte, North Carolina, radiologists to Presbyterian Hospital and Mercy Hospital, Charlotte, and Marion Sims Memorial Hospital, Lancaster, South Carolina, announce the association of DR. ALTON S. HANSEN, Diplomate of American Board of Radiology.

*SURGERY*, Vol. 1, No. 1, being Section IX of *EXCERPTA MEDICA* (Monthly Abstracting) under the General Editorship of three professors of The University of Amsterdam (Holland) carries abstracts of articles by Dr. Charles Bunch, of Charlotte; Dr. I. W. Brown, Jr., of Duke University; and Dr. R. L. Payne and Dr T. G. Price, of Norfolk.

### MARRIED

Miss Eudora Ramsay Richardson and Dr. Mason Smith, both of Richmond, were married August 30th.

The bride was graduated from St. Catherine's School and Bryn Mawr College and received a master's degree in social work from the Richmond School of Social Work of the College of William and Mary.

Dr. Smith received from the University of Virginia a B.S. degree and an M.D. degree. He completed a year of internship in Baltimore and two years of residency in ophthalmology at the New York Eye and Ear Infirmary. During the war he served as a Naval lieutenant with the Marine Corps and participated in the Iwo Jima operation and the occupation of Japan.

The marriage of Dr. Mary Stuart Wilson to Hugh Ashley Tuggle, both of Keysville, Va., was solemnized September 17th.

### DIED

DR. JOSEPH J. COMBS IS PHYSICIAN TO STATE COLLEGE.

Dr. Joseph J. Combs, who has been practicing medicine in Raleigh since 1929, will succeed Dr. A. C. Campbell, who died in June after 27 years of service at the college.

A native of Columbia, Tyrrell County, Dr. Combs is a former president of the Raleigh Rotary Club. He is a member of the Wake County Medical Society, the Raleigh Academy of Medicine, the American College of Physicians, the Medical Society of North Carolina and the American Medical Association.



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# THE JOURNAL OF SOUTHERN MEDICINE AND SURGERY

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JAMES M. NORTHINGTON, M.D., Editor

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## CONGENITAL HEART DISEASE\*

PAUL D. CAMP, M.D., Richmond

CONGENITAL heart disease is a rarity when considered from the standpoint of the population as a whole, or in comparison with the acquired forms of heart disease, such as rheumatic, syphilitic and arteriosclerotic. The proper diagnosis of congenital heart disease is important for giving proper advice concerning prognosis and treatment. The relative incidence of congenital heart disease in children probably varies according to the incidence of rheumatic heart disease in a given section. Gelfman and Levine studied 34,023 unselected autopsies in Boston and found congenital cardiovascular disease in 1.33 per cent, but this figure dropped to 0.5 per cent after the age of two. Probably 1 or 2 per cent of cases of organic heart disease in persons over 12 years of age are congenital, whereas 5 to 12 per cent of the cases of organic heart disease in children will prove congenital. Since a good number of children with congenital heart disease die in infancy or in the first few years of childhood, the pediatrician and the general practitioner see more of these cases than the cardiologist.

Certain types of congenital cardiovascular disease, e.g., bicuspid aortic valves, are in themselves unimportant, but many become the site of serious infection, usually bacterial endocarditis. Not so many years ago it was considered that a diagnosis of congenital heart disease was all that was neces-

sary or practical. Today, by careful observation of clinical signs and symptoms, plus the aid of the x-ray and the electrocardiogram, we can usually arrive at detailed diagnosis of the main defect and, at times, of a combination of defects which exist in a given case. However, it is interesting to note that in 1888 Fallot described the clinical entity, the Tetralogy of Fallot, and pointed out that this condition accounted for three-fourths of all adult cases of congenital cardiovascular disease showing cyanosis. This condition had been described by Farre in 1884. To the late Dr. Maude Abbott should go a great deal of the credit for our more recent knowledge concerning congenital cardiovascular disease.

The fundamental cause of the various congenital defects is not known. Fetal endocarditis apparently accounts for certain cases. Heredity seems a positive factor. Abbott reported hereditary influence in at least 97 cases of a series of 1,000. The incidence of premature birth in cases of congenital heart disease was twice that in deliveries of infants with normal hearts.

I shall make no attempt to discuss the rare types, of little interest, many only diagnosed by postmortem examination. I shall emphasize the more frequent and clinically recognizable types. For clinical purposes the following will suffice:

Group I—No Abnormal Communication (Acyanotic Group)

Group II—Cases of Arterial-Venous Shunts with Terminal Reversal of Flow (Cyanotic Group)

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgfield Inn, Greensboro, N. C., March 3d and 4th.

### Group III—Cases of Permanent Venous-Arterial Shunt and Retardation of Flow (Cyanotic Group)

**Symptoms:** By no means all cases of congenital cardiovascular disease present symptoms. Cases of slight degree of patency of the ductus arteriosus, of uncomplicated interventricular septal defect, of slight degree of coarctation of the aorta and of true dextrocardia—all may lead a normal life without symptoms. They may show symptoms under undue physical strain or if complicated by infection, especially of the respiratory system.

Dyspnea is the most frequent symptom of congenital cardiovascular disease. It may appear only on strenuous exertion, or may be so marked that a small child will sit down and rest several times in crossing a room. Occasional or paroxysmal coughing is a frequent symptom. In certain cases there is hemoptysis, in others, nose bleed. Pain is rather infrequent but may be present in abnormalities of the coronary arteries. Hoarseness and partial loss of voice occurred in one of my cases, due to a paralysis of the left recurrent laryngeal nerve. The cerebral symptoms are important and frequent. These may range from infrequent momentary spells of dizziness to spells of loss of consciousness at times accompanied by convulsions and mania. These symptoms are rarely due to true Stokes-Adams syndrome as a result of congenital heart block but are most often due to cerebral anoxemia caused by mixture of the venous blood with the arterial. Tingling and numbness of the extremities occur. One of my patient's chief complaints were a feeling of tightness of the skin of her extremities and of a feeling as though her arms were being twisted from the sockets. Dysphagia is sometimes noted in abnormalities of the aortic arch. A patient often gives a history of susceptibility to infection, especially of the respiratory system.

**Signs:** Just as some cases of congenital heart disease complain of no symptoms, others present no signs. Cases may show no evidence outside the heart of congenital defects, while other cases may not present cardiac signs, but will show collateral evidence, as cyanosis and clubbing of the fingers.

Cyanosis is the most frequently found sign. Abbott reported it present in 475 of 1,000 cases. There are three principal factors involved in cyanosis. Firstly, the shunting of the blood from the venous circulation into the arterial circulation, e.g., venous blood passing from the right auricle into the left through a large interauricular septal defect causes a marked cyanosis. At least 30 per cent of venous blood has to be shunted to the arterial side before appreciable cyanosis occurs from this cause. Secondly, in certain types of congenital heart disease, especially if the patient lives a number of years, there are capillary dilatation

and formation of many new capillaries and stasis with congestion of the blood flow through them. These disturbances of themselves contribute a great deal to the cyanosis. Thirdly, deficient oxygenation of the blood passing through the lungs—not nearly so important as the first two.

The cyanosis may be slight and occur after slight exertion, as crying or coughing, or only after prolonged exertion. On the other hand the cyanosis may be a bluish-violet discoloration of the skin and mucous membranes deepening to a purple on slight exertion. This, considered with the other signs of congenital heart disease and with the absence of edema, enables one to make a diagnosis of congenital heart disease.

Clubbing of the fingers and toes is an important sign, more apt to occur later in the disease. Other congenital defects may occur elsewhere in the body. Growth may or may not be retarded.

Physical examination of the heart may or may not give help. Little or no evidence may be obtained from some cases of tetralogy of Fallot, auricular septal defects, or right side aorta. The heart may or may not be enlarged. There may be right side enlargement. In patent ductus arteriosus and in auricular septal defects there is often increased percussion dullness in the second and third left intercostal spaces.

Palpation may reveal a thrill, most often felt at the p. m. i. of the murmur.

Murmurs, usually systolic, are the most striking cardiac signs. Serious defects may be present without any murmurs or other abnormalities of the heart sounds or heart rhythm. Systolic murmurs do not prove heart disease. However, if a loud, harsh systolic murmur is present, a careful search for heart disease should be made. Levine found that in 1,000 "normal" cases every case presenting a grade-3 murmur was found to have definite heart disease. The pathognomonic murmur is the loud, to-and-fro, continuous "machinery" murmur, heart beat in the first and second interspaces in patent ductus arteriosus. Isolated diastolic murmurs are a rare finding in congenital cardiovascular disease. In stenosis of the pulmonary valve the systolic murmur is best heard in the second left intercostal space, in stenosis of the infundibulum in the third, and in interventricular septal defects (Roger's disease) in the third and fourth interspaces at the sternal borders and usually sharply localized.

The blood pressure findings are of help mainly in two fairly frequent types of cases—coarctation of the aorta and patent ductus arteriosus. In the former the blood pressure in the upper extremities is usually high and always higher than in the lower extremities, which, of course, is the reversal of the normal finding. The blood pressure in the lower extremities should be taken on every young

patient, especially males, if a persistent high blood pressure is found at routine examination as 0.1 per cent of the entire population have this abnormality. In cases of patent ductus arteriosus, the flow of the blood from the aorta through the patent ductus causes a wide pulse pressure similar to that found in aortic valve insufficiency. Thus the pulse pressure is of aid in determining the degree of patency and the degree of disturbance in the flow caused by the defect.

Cases of congenital heart disease with cyanosis usually show a polycythemia. The laboratory is of great aid in establishing the diagnosis of a superimposed subacute or acute bacterial endocarditis.

The electrocardiogram may or may not be of help. In "mirror image" dextrocardia, presenting complete inversion of Lead I and transposition of Leads II and III is pathognomonic. Defects causing preponderant right ventricular hypertrophy, e.g., pulmonary valve lesions alone or in combination as in the tetralogy of Fallot often present marked right axis deviation. Defects causing strain of the left ventricle, e.g., coarctation of the aorta, often produce left axis deviation. Cases may present rather characteristic diphasic QRS complexes in all leads.

Röntgen-ray studies often give us a great deal of information concerning congenital cardiovascular defects. I would like to emphasize here the necessity of not only taking the routine anterior-posterior and lateral plates on the patient, but also of a careful study of the patient under the fluoroscope, including the administration of barium to outline the esophagus and its relation to the heart.

There may be no great enlargement of the heart; however, marked enlargement of the whole heart in infancy suggests congenital idiopathic hypertrophy of Von Gierke's disease. The determination of the conformation of the heart and great vessels is important. A marked prominence of the pulmonary conus suggests a patent ductus, while the same prominence, plus evidence of auricular dilatation and marked congestion of the pulmonary vessels suggests interauricular septal defect. The *cœur en sabot*, or "wooden shoe," type of heart suggests right ventricular enlargement and when associated with prominence of the ascending aortic shadow due to transposition to the right of the aorta is very suggestive of tetralogy of Fallot. Finally, the prominence of the ascending aorta, the absence of the aortic knob and the notching of the lower side of the ribs are diagnostic of coarctation of the aorta.

### Case Reports

Group I. No Abnormal Communication (Acyanotic Group)  
Coarctation of Aorta—Adult Type

CASE 1.—White boy, aged 17, first seen Dec. 12th, 1939. Patient stated he had no complaints. His mother said he was nervous several years ago when told he had congenital

heart disease. Last week patient had a spell during which he had a skim over his eyes, also some numbness of his hands and of the jaw and throat on the right side. Following this a headache for three hours. Took aspirin, went to sleep shortly and awakened feeling fine. Has continued to feel perfectly normal. He has had no dyspnea, chest pain, edema nor other cardiovascular complaints. Patient has always been quite normally active, working on a farm, playing ball, etc., without any difficulty.

Past history and family history not relevant.

Physical examination (only pertinent points included): Normal development externally and well nourished. Fundi normal. Lungs—no evidence of congestion or infection. Heart—rhythm regular, rate was 72 (sitting quietly) and (lying on table). Exercise tolerance good. After hopping vigorously on each foot, alternately, 20 times pulse rate 84 (returned to 72 in one minute). No abnormal dyspnea from this exertion. Heart borders, on percussion: Left border dullness extends  $3\frac{1}{2}$  cm. to the l. of the m. s. l. in the first, 3 cm. in the second, 4 cm. in the third, 8 cm. in the fourth, and 9 cm. in the fifth interspace. Right border dullness extends 3 cm. to the r. of the m. s. l. in the first,  $2\frac{1}{2}$  cm. in the second,  $2\frac{1}{4}$  cm. in the third, and 3 cm. in the fourth interspace. The maximum apex impulse in the fifth interspace,  $8\frac{1}{2}$  cm. to the left of the m. s. l., quite diffuse and pulsation of the chest wall from the apex inward toward the sternum upward to third interspace.

Heard best in the second and first interspaces, just to the right of the sternum, a rather harsh but slightly high pitched and long systolic murmur, transmitted toward the base of the neck and to the back of the neck somewhat. The second sound sharp, snapping, no diastolic murmurs heard following the second sound. The aortic second sound greater than the pulmonic second sound. The first sound at the apex rather loud and booming and accompanied in the latter portion by a rather rough systolic murmur, lower pitched than that heard at the aortic area and also later in systole. The second sound at the apex quite sharp. No pericardial friction rubs heard and no thrills felt. Posteriorly there could be seen at certain points along the chest wall, along the intercostal spaces slight pulsation of the intercostal vessels. This seemed more marked just under the scapula and was noticed only when the patient was in certain light. A systolic murmur could be heard practically all the way down both sides of the posterior portion of the chest 4 or 5 cm. from the midline of the spinal column, and in some of the interspaces a definite impulse could be felt. No other gross evidence of abnormal communications between the upper and lower extremities, or of enlargement of the normal communication detected. Blood pressure—left 152/82, right 156-/86; a little while later the b. p. in the legs from 90 to 92 over 68 to 72 and it was very difficult to feel pulsations in the popliteal artery.

Abdomen: Liver and spleen not palpable.

Extremities: No cyanosis. No clubbing.

Complete routine laboratory reports, including non-protein nitrogen, sugar and calcium, urinalyses and blood count normal.

The electrocardiogram shows slight right axis deviation instead of the expected left, otherwise not remarkable.

X-ray of Chest: There is very definite, rather irregular notching seen on the under surface of several of the ribs, particularly on the third and fourth left ribs. On the right also irregular notching on the third and fourth and to a lesser extent on the fifth and possibly the sixth rib. Bronchial markings increased and a few calcified nodules about the hiluses of the lungs. The apices seem clear. The heart is about the upper limits of normal size; the shape suggests some hypertrophy in the region of the left ventricle. The pulmonary conus is slightly more prominent than normal, the area of the great vessel smaller than one would

spect with this size heart, practically no evidence of any aortic arch.

This case presents the classical picture of coarctation of the aorta—higher blood pressure in the upper than in the lower extremities, evidence of collateral circulation shown on physical examination and in the x-ray by the notching of the lower edge of the ribs (enlarged intercostal arteries), systolic murmur, and x-ray evidence of the absence of the aortic knob.

#### Group II Late Cyanosis

##### Interventricular Septal Defect (Roger's Disease)

CASE 2.—White boy, 8½ years, first seen Sept. 19th, 1944. No complaints. Sent to me for cardiovascular check, as his family doctor had diagnosed congenital heart disease.

Patient was delivered at home. No mention was made of his being a blue baby. The mother never noticed him to be blue. Until the patient was four years old much exertion brought on coughing spells and after this his lips and the tips of his fingers would get a little blue. Since this has had no dyspnea, palpitation, chest pain, edema or cyanosis.

Past History: Whooping cough and chickenpox. Growing pains but no definite manifestations of rheumatic fever. For past six months has had some twitching of mouth, eyes and hands. Older brother has severe twitching of eyes and mouth. Always played normally without undue fatigue.

Family History: Irrelevant except as noted.

Physical Examination. Normally developed, well nourished, ht. 4 ft. 5 in., wt. 60 lbs. Tonsils enlarged, cryptic, not acutely inflamed. Lungs normal, no congestion.

Heart. Slightly enlarged. Midclavicular line equals 5½ cm. L. border dullness and max. apex impulse 6 cm. in 5th int. space. R. border dullness equals 2½ cm. in the 4th interspace. Sinus arrhythmia. Normal rate. A long, loud, medium pitched, rough, systolic murmur heard over the precordium, loudest at the 4th interspace at the sternal border, not transmitted to apex. No diastolic murmurs. No pericardial friction rubs. A definite thrill felt in 4th and 5th spaces, close to the sternum.

Abdomen negative.

Extremities: No joint signs. No choreiform movements. Questionable clubbing of fingers and questionable cyanosis of tips.

Laboratory: Hemoglobin 78%. R.B.C. 4,080,000. W.B.C. 7,800, sed. rate 5 mm. in 60 min.

Ecg. shows normal electrical axis, large QRS complexes and slight slurring in all leads.

X-ray: Lungs: No congestion or increased vascularity. Heart: Slight enlargement. No dilatation of auricles. Pulmonary artery and aorta normal.

This case presents the findings in uncomplicated interventricular septum defect, Roger's disease: A negative history except slight cyanosis on exertion up to four years of age, slight enlargement of the heart, very slight possible cyanosis of lips and, characteristically, a loud, long, rough systolic murmur and a systolic thrill heard best along the left sternal border at the fourth interspace. No evidence of rheumatic fever or rheumatic heart disease.

#### Group II Patent Ductus Arteriosus

CASE 3.—White boy, aged 13, first seen by me on April 19th, 1944. He was seen by Dr. Randolph Graham on May 7th, 1941. Prior to this and until after operation he

complained of fatigue and dyspnea on moderate exertion, also of cyanosis. He stated that he felt "awful" before the operation.

Past History: Irrelevant except pneumonia at 3 months, 3 years and 6 years of age.

Family History: Patient has a twin brother and an older brother, alive and well. Father and mother alive and well.

Physical Examination (note immediately following from Dr. Graham's examination): "White male, aged 9 years, 7 months, rather thin, ht. 4 ft. 6 in., wt. 55 pounds, normally developed externally. Head, ears, nose and eyes and throat not remarkable. Lungs clear, no evidence of congestion. Heart: Borderline enlargement. Max. apex imp. 7½ cm. and l. border dullness 8½ cm. in 5th l. inter. space, just beyond nipple line. Sinus arrhythmia, rate normal. A loud machinery-like murmur, with the systolic portion predominating, heard best at the pulmonic valve area and widely transmitted. A short diastolic thrill felt in the pulmonic area. The pulmonic second sound markedly accentuated and louder than the aortic second sound.

Abdominal examination negative.

Extremities show no clubbing, cyanosis or edema.

Dr. Isaac Bigger operated on this patient May 3d, 1943, and found a patent ductus arteriosus, which he ligated and the patient got along fine and was out of the hospital in three weeks. Patient kept quiet for two to three weeks longer and since then has done only things he wanted to.

I saw the patient for Dr. Graham Sept. 19th, 1944, 16 months after his operation. He complained of fatigue and had been having a slight fever for 2 months, had also had some allergic symptoms and once had a questionable vasomotor episode, possibly vagotonia. However, he has had no further dyspnea or cyanosis and has felt much better.

Physical Examination: White boy, aged 13, normally developed but rather thin, ht. 5 ft. 1 in., wt. 77½ lbs. Lungs normal. Heart: Rhythm regular. Rate normal. P2 accentuated and greater than A2. No systolic nor diastolic murmurs, no pericardial friction rubs heard. No thrill felt. Heart borderline in size, l. border dullness 8½ cm., in 5th l. inter. space. Max. apex impulse 8 cm. to l. in 5th space. Midclav. line 6½ cm. R. border dullness 3+ cm. in the 4th space.

Abdominal examination normal.

Extremities show no cyanosis, no clubbing, no edema.

Laboratory reports of no significance. Two blood cultures sterile.

Electrocardiogram shows only slight slurring and diphasic QRS complexes.

X-Ray (8-11-43) Chest—Lungs: Slight increase in bronchial markings. Heart: Not enlarged. Left border rather straight. Slight prominence area pulmonary conus. Sept. 17th, 1944 Chest—Lungs: No change. Heart: Not enlarged. No appreciable change in shape.

This is a very interesting case of patent ductus arteriosus, showing findings before and after operation. Before operation he presented the classical findings—fatigue and dyspnea on exertion, cyanosis at times, the typical to-and-fro machinery murmur and thrill at the first and second left intercostal spaces. X-ray showed some prominence of the pulmonary conus. Ecg. showed diphasic QRS complexes. After operation the murmur and thrill disappeared and the patient ceased having symptoms. The fatigue and slight fever for the past two months suggest the possibility of subacute bacterial endocarditis, or rheumatic fever; however, after careful check one cannot substantiate either diag-

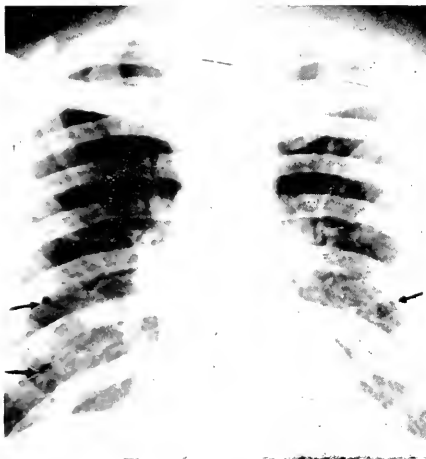


Figure 1, Case I—X-Ray: Coarctation of the Aorta

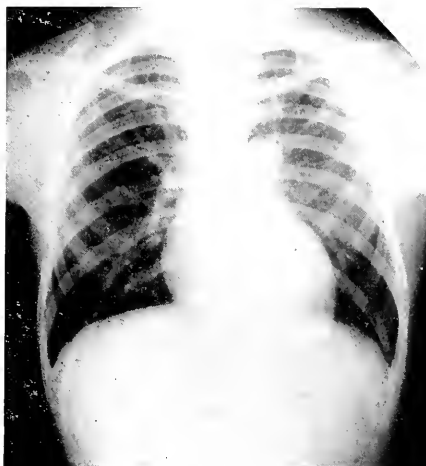


Figure 2, Case II—X-Ray: Interventricular Septal Defect (Roger's Disease)

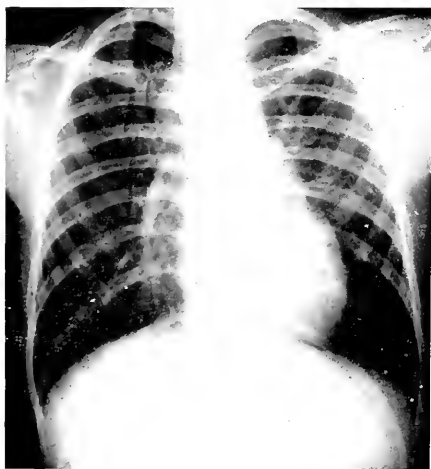


Figure 3, Case III—X-Ray: Patent Ductus Arteriosus



Figure 4, Case IV—X-Ray: Interauricular Septal Defect

nosis. Dr. Graham is to be congratulated on his correct diagnosis and Dr. Bigger on his brilliant results in an operation that is uncommon, as well as difficult. Such progress as this is encouraging and helps us to have faith in what the future will bring in medicine. Dr. Bigger has operated on another case of patent ductus arteriosus (Case H. M. of the Medical College of Virginia and Rheumatic

Fever Survey, State of Virginia) that I had the privilege of seeing, and this boy is doing nicely despite the fact that his machinery-like murmur has returned.

#### Group II. Interauricular Septal Defect

CASE 4 —White housewife, aged 30, first seen Nov. 30th, 1943. Complaint: Fainting spells for past two or three years.

Present Illness: Patient had rheumatism as a child; she

was a "blue baby" and has known all her life that she had a murmur and a congenital heart disease. She has always had marked dyspnea and fatigue on exertion and has had to rest a great deal all her life. Three years ago, while walking up a long flight of stairs, she fainted and was unconscious for a long time. A few days later she lost her voice and was told somewhat later by a physician that she had a paralysis of her vocal cords. Since this time she has been unable to walk any distance, would become short of breath and nauseated. If she did not rest she would vomit and become unconscious. She has not done well for the past nine months. The dyspnea has greatly increased, as has her fatigue. She has indefinite pain in the left chest and also palpitation, at which times her heart becomes fast and irregular. She also complains of dryness of the throat and coughing if she takes any exercise.

**Past History:** Patient has had two Cesarean births. "Rheumatism" as stated above. Has had three children.

**Family History:** Irrelevant.

**Physical Examination:** White woman, aged 30, wt. 135, ht. 5 ft. 2 in., normal external development. Throat: Apparent paralysis of left vocal cords. Lungs: Normal. No evidence of passive congestion. Heart: Percussion 1. border dullness 2½ cm. to the left of the m. s. l. in the first interspace, 3 cm. in the second, 7 cm. in the third, 9 cm. in the fourth, and 9½ cm. in the 5th. Maximum apex impulse in 5th space 9½ cm. to the left of the m. s. l. Mid-clavicular line 8 cm. R. border dullness 4 cm. to the r. of the m. s. l. in the first interspace, 4 cm. in the second, 5 cm. in the third, and 5½ cm. in the fourth. P2 accentuated and split and greater than A2. At the apex and rather localized but certainly not transmitted to the axilla, a moderately short, not loud, medium pitched systolic murmur. No diastolic murmurs, either early or late, at base or apex. No definite thrill anywhere over the precordia. It was my opinion that one could feel a definite shock or impulse associated with the markedly accentuated P2. No pericardial friction rubs heard. B. p. 128/72, systolic pressure in leg 132 to 140. Rhythm was regular, rate normal. The exercise tolerance was poor.

**Abdominal examination:** Negative except some enlargement and tenderness of the liver at times.

**Extremities:** Slight pitting edema. No definite cyanosis, no clubbing.

**Laboratory Reports:** Not remarkable.

**Electrocardiogram:** T waves changes due to digitalization, tendency to right axis deviation and diphasic and slurred QRS complexes.

**Roentgenographic and Fluoroscopic studies** revealed a heart of most unusual shape, with a marked increase in the pulmonary conus area. There was some enlargement of both ventricles, especially of the right, but no apparent enlargement of the auricles. The aortic shadow appeared rather small. Under the fluoroscope there was seen a typical "hilum dance." Dr. D. D. Talley x-rayed this patient's chest and his conclusions were: (12-14-43)

"There is evidence of marked cardiac deformity with increase in hilar density. Part of this increase is that of a healed primary tuberculous complex, but there is enlargement and expansile pulsation in the pulmonary arteries in this region. The picture is believed to be that of probable obstruction in the pulmonary circulation. Some other congenital abnormality may be considered. Also the picture would be consistent with a cor pulmonale, though no organic pathology is demonstrable in the lungs to act as an obstructive factor; pulmonary arteriosclerosis might be present without roentgen evidence of its presence. The possibility of a lymphoblastoma formation in the hilar regions is considered but not thought likely; such a condition should be confirmed or excluded by subsequent observations."

Dr. Talley's report for 7-18-44 (conclusions):

"The findings as previously reported are those of a pulmonary obstruction and from the x-ray standpoint alone are consistent with a patent ductus arteriosus (if confirmed by clinical findings), or a pulmonary stenosis."

I was not absolutely sure of the diagnosis. My first choice would be an interauricular septal defect; my second a patent ductus arteriosus with a possible interauricular septal defect. However, the lack of a machinery-type murmur and the tendency toward right axis deviation would be against a patent ductus. But Abbott states that in some cases of patent ductus the only murmur heard is a systolic murmur at the apex. I sent my records, including x-rays, to Dr. Hugh Roesler of Philadelphia and he felt the case was one of interatrial septal defect with possible congenital splitting of a mitral leaflet. The question of operation was, of course, brought up in this case but we felt that, even if this patient had a patent ductus, it was not uncomplicated and therefore advised strongly against operation.

#### Group III. Stenosis Pulmonary Artery

**CASE 5.**—White housewife, aged 36, first seen April 24th, 1935. Chief complaint: Hoarseness and shortness of breath on exertion, duration 16 years. Present illness: As a child she could not run and play as other children without becoming short of breath, does not know if was a "blue baby" or turning blue on exertion in childhood. Had indefinite growing pains in childhood, severe influenza in 1919, thought to have had pulmonary tuberculosis at this time and this disease has been suspected from time to time since. Hemoptysis first time in 1927 and from time to time since then.

Patient continued to have dyspnea on one flight of stairs, complained of knees feeling weak. If she walked too much she got blue about her finger nails and lips and became dizzy. At times she felt as though her heart stopped and she could not get her breath. She had some edema of feet and ankles. Continuing to have her same cardiovascular complaints, she entered the Johnston-Willis Hospital in July, 1941, where she died late in July of a malignant melanoma, involving lungs, liver, adrenals and subcutaneous tissue.

**Past History:** Irrelevant except as noted above.

**Family History:** Patient's mother and husband died of tuberculosis.

**Physical Examination:** White woman, aged 36, well nourished. Skin bluish, particularly after exertion, even slight exertion caused cyanosis of lips, ears and finger and toe nails. Head and lungs were not remarkable.

**Heart:** Rhythm normal, rate 80. Over the entire precordium a rough, low-pitched, systolic murmur; best heard in the third space just to the l. of the sternum where it has a rough, grating quality, and is low-pitched but of marked intensity. Second sound replaced by a slight high-pitched and soft diastolic murmur. First sound at apex practically obliterated by the murmur transmitted from the third interspace. No diastolic or presystolic murmur at the apex, systolic thrill palpable in the 1. space. Heart not enlarged, although percussion dullness definitely increased in the second and third l. spaces. B. p. 98/80.

**Abdominal examination** negative.

**Extremities:** Definite clubbing of the fingers and cyanosis of nails.

**Laboratory:** R. B. C. 9,100,000. Hemoglobin 120% plus

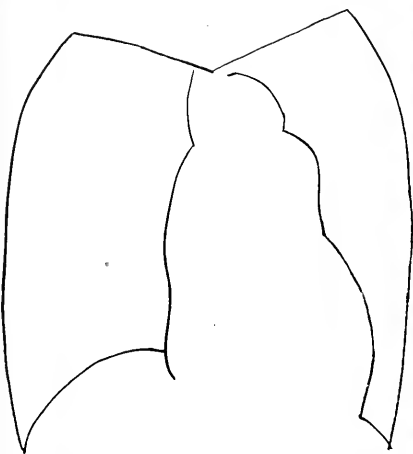


Figure V, Case V—Orthodiagram: Stenosis of the Pulmonary Artery



Figure VI, Case VI—X-Ray: Tetralogy of Fallot.

Electrocardiogram showed marked diphasic QRS complexes in all leads and right axis deviation; consistent with congenital heart disease with preponderant right ventricular hypertrophy.

**X-Ray** (Dr. Dean Cole's Report, Sept. 22nd, 1927): "Right Lung: Some hilus thickening. Marked thickening of descending bronchial branches with a generalized thickening of all bronchial branches which extends well into periphery. Considerable beading.

**Left Lung:** Marked thickening of all bronchial branches which extends well into periphery.

**Heart:** Right border of heart not seen. Does not extend to the right of the spine at any portion. Left border irregular in outline due to bulging in second interspace.

**Conclusions:** Findings are those of a generalized bronchitis but there are string-like shadows which give the appearance of scar tissue. It is impossible to rule out an old tuberculous infection, but no recent tubercles or unhealed tubercles are seen. It is believed much of the thickening is due to a hyper-vascularity, probably the result of the heart lesion.

Fluoroscopic and orthodiagraphic examination showed a normal aorta and a marked bulging in the pulmonary conus, indicating a markedly dilated pulmonary artery. There was no evidence of enlargement of the auricles.

**Diagnosis:** Congenital heart disease, pulmonary stenosis, probable tetralogy of Fallot.

**Autopsy Report** (courtesy of Dr. Robley Bates). Only heart and lungs and final diagnosis given below:

"The left lung is rather firmly adherent both at the base and posteriorly. The right pleural cavity contains 200 c.c., the pericardial sac 250 c.c. of straw colored fluid. The heart weighs 400 grams. There is considerable enlargement of the right ventricle, the wall 10 mm. in thickness. The left ventricle is slightly thickened. The pulmonary artery is found to contain a constriction 9 cms. from the semilunar valves. Proximal to the constriction the artery is dilated to twice the normal. The opening at the stenosed area admits an ordinary lead pencil. Beyond this the artery is quite small. The aorta is grossly normal. There is slight calcification at the bases of the

semilunar valves, but these are competent, and there is no obvious obstruction. The mitral and tricuspid valves are normal. The intraventricular septum is intact. The auricles are not enlarged. The foramen ovale is open, 2 mm. in diameter. However, this is covered by the usual flap and it is doubtful if it was actually functioning through life. The myocardium shows no evidence of degeneration or infarction. The coronary vessels are patent and show no evidence of sclerotic changes. The lungs show considerable congestion in both bases, there are numerous small pigmented areas scattered over the pleural surface of each, 1 mm. in diameter. Cut section shows numerous dark nodules and 2 to 5 mm. in diameter in all lobes. The pulmonary vessels are open. No emboli can be found. The apices are spongy and show no evidence of consolidation or congestion."

**Final Diagnosis:**

1. Malignant melanoma involving lungs, liver, adrenals, and subcutaneous tissues.
2. Pneumonia—bilateral, pulmonary; edema—terminal.
3. Congenital defect of the pulmonary artery—stenosis 9 cms. from the pulmonary valves.
4. Cardiac hypertrophy chiefly involving the right ventricle.
5. Patent foramen ovale.
6. Ureteral stricture—right with hydronephrosis—right.

This case presents many points of interest. There was only one congenital defect and this was not in the lower infundibulum or the pulmonary valve, but a stenosis of the pulmonary artery 9 cm. from the pulmonary valve. The septal defects and the transposition of the great vessels found in the more common tetralogy of Fallot were absent. The cyanosis was not due to venous arterial shunt but to retardation of blood flow, causing stasis and deoxygenation in the capillaries (Lundsgaard's D factor). The defect was probably due to fetal inflammatory conditions. This case shows the classical findings of cyanosis, clubbing of fingers, loud

systolic murmur and thrill and increased percussion dullness in third left intercostal space, enlargement right side of heart, electrocardiographic findings, and marked increased pulmonary conus by x-ray, polycythemia—all of which are found in congenital pulmonary stenosis. However, I do not believe that clinically one could have diagnosed the stenosis as being 9 cm. from the pulmonary valve.

CASE 6.—White boy, aged 4 years 9 months, first seen June 16th, 1944. Mother did not know whether was born normal. He had pneumonia at 8 months and pediatrician said patient had congenital heart disease then. Patient's general health has been good. No childhood diseases, no rheumatic manifestations. Patient has continued to have dyspnea and cyanosis on slight exertion. Following fatigue he has had spells of headache, loss of use of his extremities and cyanosis lasting five to ten minutes.

Family History: Negative.

Physical Examination: Patient is white boy, wt. 49 pounds, normally developed externally, head and lungs not remarkable.

Heart: Seems definitely enlarged right and left. Mid-clavicular line 5 cm. L. border dullness and max. apex impulse equals 7 cm. in the 5th space. R. border dullness equals 3 cm. in the 4th. Sinus arrhythmia. Rate 92. P2 definitely accentuated and louder than A2. A loud, long, rather harsh systolic murmur heard over the entire precordium, loudest in the 2nd and 3rd left spaces. No diastolic murmurs heard. A systolic thrill palpable in the second and third spaces.

Abdomen: Negative.

Extremities: Definite clubbing of fingers and cyanosis of fingers, toe nails and mucous membrane of mouth.

Laboratory Report: R. B. B. 6,200,000, hemoglobin 120. Urinalysis, calcium, and sed. rate normal. Ecg. shows marked QRS complexes in all leads and marked right axis deviation, suggesting congenital heart disease with preponderant hypertrophy of right ventricle.

X-Ray Chest: Lungs: The bronchial markings seem somewhat increased. Heart: The great vessel shadow greater than normal, heart of the typical *coeur en sabot* shape. These findings suggest right ventricular hypertrophy with possible transposition of the ascending aorta to the right.

This case presents the classical picture of tetralogy of Fallot—stenosis of the pulmonary valve, interventricular septal defect, transposition of the aorta to the right so that it overrides the right ventricle partially, and hypertrophy of the right ventricle. The findings of cyanosis, clubbing, systolic murmur and thrill in the third left intercostal space, right sided cardiac enlargement, polycythemia, "wooden shoe" heart, and marked right axis deviation in the electrocardiogram established the diagnosis. This combination of defects accounts for three-fourths of adult cases of congenital heart disease with cyanosis.

#### Discussion

DR. FREDERICK R. TAYLOR, High Point, N. C.: Mr. President, Dr. Camp has given us a very interesting paper. He states he does not know of anyone having operated on coarctation of the aorta, and I happen to know this—it has not been published yet—but some operations for coarctation of the aorta have been done by Dr. Bradshaw of Bowman Gray. I have seen motion pictures of the opera-

tion. I suppose they will be reported later.

One little detail—Dr. Camp in the acyanotic group classified Roger's disease—deficient interventricular septum—as having two abnormal communications. It has an abnormal communication but ordinarily there is a shunt from the greater to the lesser circulation, so we have what the French so exquisitely call "functional silence," as symptomatology. In the operation in which communication is made between the aorta and pulmonary artery, what is being done is making an artificial patent ductus, and I think only time can tell us what the end result of that will be. If we make an artificial patent ductus, we do it with our eyes wide open, knowing we are creating a pathological condition that may give trouble, but one far less urgent than the one we are correcting. The thing for the future to determine is how many of these people with artificial patent ducti will later develop acute bacterial endocarditis. If they do, we can't close the patent ductus as we do in uncomplicated cases of patent ductus, for if we do, we restore the original condition which the patient had at first. Perhaps penicillin or other therapy will be so fully advanced by that time that we can cure the bacterial endocarditis whenever it occurs, but it will be interesting to watch the development of this situation.

DR. PAUL D. CAMP (closing): I appreciate Dr. Taylor's discussion of my paper. I am afraid Dr. Taylor misunderstood me on two things:

Firstly, in regard to Roger's disease, interventricular septal defect. I may have said acyanotic group, but I don't think that I did. It is classified not acyanotic, or cyanotic, it is classified in the late cyanotic group, that is, if something happens to the circulation, by weakness or otherwise, when more blood goes from the right to the left side of the heart, then, of course, the patient becomes cyanotic. I won't go through here and look, I may have read it wrong, but I am quite sure that is what it was.

Secondly—I feel sure that Dr. Taylor misunderstood me—I said, "the number of cases of coarctation of the aorta operated on is much smaller—Blalock has done three; Bigger, one; and Gross, two." That is all the published record I could find. The mortality rate, of course, is very high, and I tried to intimate in the paper that the correction of pathological physiology wasn't nearly as perfect in the operation for tetralogy of Fallot, as it is in the patent ductus where we tie off the patent ductus, nor in the coarctation of the aorta, where there is an end-to-end anastomosis. They really make an artificial patent ductus and time alone will prove the value of this.

Probably the exact meaning of tetralogy of Fallot is not familiar to all of us, it, of course, consists of pulmonary stenosis, dextraposition of the aorta, interventricular septal defect, and preponderant hypertrophy of the right ventricle. In these so-called blue babies and in adults with cyanotic heart disease, you will be right in 75 per cent of the cases if you make this diagnosis.

Finally, in regard to the possibility of development of subacute bacterial endocarditis in the artificial patent ductus, nobody knows about that. I don't believe that would be the tendency, possibly with penicillin and sulfonamides we can cure from 70 to 80 per cent of subacute bacterial endocarditis cases at this time.

I want to thank Dr. Taylor again for discussing my paper.

HE WHO WRITES CARELESSLY confesses thereby that he attaches little importance to his own thoughts. It is only when a man is convinced of the truth and importance of his thoughts that he feels the enthusiasm necessary for an untiring effort to find the clearest, finest and strongest expression for them, just as for sacred relics or priceless works of art there are provided silver or gold receptacles.—Sir Arthur Quiller-Couch.



# An Evaluation of Complications Encountered in Cervical Carcinoma

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**A**LTHOUGH the complications associated with carcinoma of the cervix have long been recognized as being extremely important, little has been written concerning them. There are complications associated with the disease process itself and complications associated with the treatment of the disease. Although many of the therapeutic procedures utilized in the treatment of malignancy of the cervix seem simple and foolproof, even a meager experience in this field makes one realize that they are fraught with many potential dangers.

Carcinoma involving any tissue or organ is a destructive lesion associated with invasion, infiltration, erosion and slough—the latter a result of extensive invasion and secondary infection. With these factors in mind we can offer an explanation for the fistulae involving bladder, rectum, urethra and ureter which not infrequently occur. At the same time, the disease itself where it has had its source in the pelvic organs, can be offered as an explanation for obstruction in the lower portion of the ureter due to the infiltrative tendency of the disease. It has also been suggested that the effect of radiation therapy by x-ray and radium, and the scar tissue resulting, is responsible in many cases for ureteral obstruction. The destructive effect of these therapeutic agents we are coming to recognize more clearly, and they, too, are not infrequently responsible for vesico-vaginal and recto-vaginal fistulae.

The complications of cervical carcinoma that are due to its growth alone are destruction of the bladder and rectum and blockage of the ureters. Later in the progress of the disease hemorrhage and distant metastasis to vital organs occur.

Vesico-vaginal and recto-vaginal fistula in untreated cervical cancer are not rare. Smith<sup>2</sup> believes that fistulae are twice as frequent in untreated cases as in treated ones and that they are evidence of advanced disease. Meigs<sup>3</sup> states that death in untreated cases is often due to ureteral blockage and uremia. Ureteral blockage is a frequent complication of cervical cancer and is reported as occurring in 70 per cent of the cases of Graves, Kickham and Nathenson.<sup>4</sup>

## Discussion

Ewing<sup>8</sup> states that "the natural termination of most cases of uterine cancer is through uremia from occlusion of the ureters." Warren<sup>9</sup> has said that impairment of the renal function due to ureteral obstruction is the most common cause of

death in this disease. Williams<sup>11</sup> in 1895, in a series of 78 autopsy studies, reported an incidence of hydroureter with hydronephrosis of 85.9 per cent. As early as 1868 Wagner<sup>11</sup> wrote that one-third of his cases showed marked ureteral involvement at post-mortem examination. Herger and Schreiner<sup>12</sup> in a clinical study of 50 cases of carcinoma of the cervix demonstrated dilatation of the ureter and hydronephrosis in 48 per cent of the group. Dexler and Howes<sup>13</sup> in a clinical pathological investigation of patients with broad ligament extension, reported that hydronephrosis was found on cystoscopic examination in 68 per cent of their cases. A very enlightening review of 600 cases of carcinoma of the cervix with attendant complication was offered by Graves, Kickham and Nathenson<sup>4</sup> in 1936. In their series of cases 79.3 per cent showed ureteral obstruction at post-mortem examination. Curiously enough, two patients in our series, only one of whom was treated and both of whom were symptom free and devoid of clinical evidence of residual malignancy, died uremic deaths. The autopsy revealed scar tissue occlusion of the lower end of both ureters. In view of this observation we began to look for ureteral occlusion and instituted urinary tract investigation as a regular procedure in the management of these patients.

It is noted from Table V that ureteral obstruction occurred in 18.2 per cent of the group I cervical carcinomas, in 27.8 per cent of the group II cases, in 31.8 per cent of the group III cases and in 48.9 per cent of the group IV carcinomas. In the 100 cases reviewed, invasion of the bladder by tumor occurred in one out of 18 group II patients (5.6%). There was also invasion of the bladder by tumor in one of the 49 group IV patients (2.04%). The incidence of cystitis as indicated by subjective symptoms and cystoscopic examination is quite low; the high incidence being in the group IV cases, which one would expect.

Backache with pain and tenderness along the course of the ureter associated with disturbance of the bladder habit were the most common findings in our group of patients. Such disturbances as headache, nausea, vomiting, drowsiness and visual changes were seldom noted. Renal tenderness was a more or less constant finding. Palpable enlargement of the kidney was found in three of our 100 patients. Oliguria occurred only in the two previously mentioned patients who died of uremia.

These two patients are not included in our group of 100 shown in the tables. In many of these patients with ureteral or bladder involvement it was found that there was a tendency for the non-protein nitrogen to be elevated often to 40, 50 and occasionally as high as 60 mg. per 100 c.c. Dilatation of the ureters frequently resulted in a lowering of the NPN.

The renal function as determined by phenol sulphophthalein in these cases and by the Mosenthal test was definitely impaired. In the late group IV carcinomas with bladder and ureteral involvement the excretion was below 20 per cent.

It becomes apparent in view of the group of patients suffering from carcinoma of the cervix, that there are complications which will eventually cause the death of the patient unless they are recognized early and adequately treated. However, lack of recognition of a complication such as occlusion of the ureter may result in a rapidly developing uremic state and death which may not justly be attributed to the malignant disease itself.

The average level of ureteral occlusion is at 3 point 4 to 6 cm. above the orifice in the bladder. The ureter at this level lies beneath the broad ligament and close to the cervix. The proximity of the distal end of the ureter to the anterior wall of the vagina makes possible ureteral involvement at this lower level when vaginal extension of the malignant disease has occurred.

We believe that the cause of ureteral obstruction is equally divided between encroaching tumor and scar tissue incident to therapy. We also believe that all cases of malignant disease of the cervix should be subjected to complete urological investigation when first seen and before treatment is instituted. During the course of the treatment these patients should be examined by cystoscope with exploration of the ureters at least once a month. Thus obstruction of the ureter with its attendant deteriorative changes in the upper urinary tract will be detected as promptly as possible. In the early group I cases of cervical malignancy in which the first urological study may be negative, a base line of information may be afforded for later comparisons as the case progresses. Surely the neglect of this investigation may result, as we have shown, in needless suffering for the patient in many instances, and occasionally in a terminal uremia. The importance of a very careful analytic and systematic history and detailed and complete physical examination including cystoscopic examination with cysto-pyelography, proctoscopic examination and if indicated, a barium enema, cannot be overemphasized. The importance of a history eliciting information concerning an abortion with infection or a septic post-partum condition following delivery many years before, is of the utmost

importance in deciding the course of therapy to be utilized in these patients. This information decides whether radium should be used first or whether, if pelvic infection is suspected, x-radiation should be used instead. We have in our series, three cases of pelvic peritonitis resulting from the use of radium. In none of these cases did we suspect the presence of a salpingitis or other pelvic infection. A review of the history was of no value. One of these patients had had a preliminary course of roentgen therapy and at a subsequent date radium therapy was applied which was followed by an acute fulminating peritonitis.

Bowel involvement following radiation treatment is reported by Jones and Aldridge. Jones<sup>5</sup> discovered extensive involvement in seven of 520 treated cases. In five of these the large intestine was affected and in two the small intestine. Aldridge<sup>6</sup> thinks that in many cases sufficient radiation to cure the patient cannot be given without damage to the intestinal tract. A great many of the manifestations of bowel involvement such as diarrhea, tenesmus and bleeding are simple; but at a subsequent time, months to years later, scarring may occur, with resultant obstruction necessitating colostomy.

Meigs<sup>3</sup> reports bowel involvement in 2 per cent of his treated cases. This may manifest itself as hyperemia with edema, ulceration and bleeding or pain and obstruction. Pyometrium, peritonitis, and pelvic inflammation may follow in the wake of radium and x-ray therapy. Fractures of the neck of the femur following radiation treatment for cervical cancer have been reported by Miller and Folsome.<sup>7</sup> In our series three patients sustained fractures of the femur.

Table IV shows the incidence of melena, diarrhea, stricture of bowel, ulcer of bowel and tumor invasion of bowel. The incidence of these various complications is low. In Table III is shown the incidence of vesico-vaginal and recto-vaginal fistulae which also we consider to be low.

It is appropriate at this time to point out from Table III the incidence of progressive anemia which is high in groups two, three and four. Progressive anemia and septic type temperature are considered by our group as two criteria which warrant cessation of x-radiation therapy. Patients with these complications are considered to be responding poorly to the treatment. It is also noted from Table III that radiation sickness as a complication occurred infrequently.

Carcinoma of the cervix is rare in pregnancy. It is usually not considered in the differential diagnosis of bleeding, and as a result the lesion may not be discovered until it has progressed to a stage at which all hope for a cure is lost. Examination, which must of necessity include visualization of the

*Table 1*

Clinical Grading	Total No. Cases	Living Less Than 1 yr.	Living 1 yr.	Living 2 yrs.	Living 3 yrs.	Living 4 yrs.	Living 5 yrs.	Living 6 yrs.	Living 7 yrs.	Living 8 yrs.	Living 9 yrs.	Living 10 yrs. & over	Deaths	5 yr. Survival
I	11	1 (9%)	1 (9%)				5 (45.5%)	1 (9%)		1 (9%)		2 (18.2%)	5 (45.5%)	81.8%
II	18		5 (27.8%)	1 (5.6%)	1 (5.6%)	1 (5.6%)	2 (11.1%)	3 (16.7%)	3 (16.7%)	2 (11.1%)			6 (33.3%)	55.6%
III	22	1 (4.5%)	4 (18.2%)	8 (36.4%)	2 (9.1%)	1 (4.5%)		5 (22.7%)	1 (4.5%)				10 (45.5%)	27.3%
IV	49		9 (18.4%)	15 (30.6%)	6 (12.2%)	4 (8.2%)	2 (4.1%)	4 (8.2%)	3 (6.1%)	1 (2%)	1 (2%)	1 (2%)	29 (59.2%)	26.5%

*Table II*

Total						
Clinical No.	2 Mos. or Less			2 Mos. to 6 Mos.		Over 6 Mos.
	Grading Cases					
I	11	3 (27.3%)	2 (18.2%)	1 (9%)	5 (45.5%)	
II	18	3 (16.7%)	8 (44.4%)		6 (33.3%)	
III	22	6 (27.3%)	6 (27.3%)	1 (4.5%)	10 (45.5%)	
IV	49	9 (18.4%)	18 (36.7%)	8 (16.4%)	14 (26.5%)	

cervix is of utmost importance. However, the final conclusive proof depends upon the microscopic examination of the tissue removed from the suspicious area on the cervix.

Willson<sup>1</sup> in 1945 reported six patients with carcinoma of the cervix complicated by pregnancy which were treated at the Chicago Lying-in Hospital from 1931 to 1945. Two of these patients survived longer than five years but only one was free from evidence of carcinoma.

Danforth (quoted by Willson<sup>1</sup>) from a series of published reports concluded that the incidence of cervical carcinoma complicating pregnancy is only 0.032 per cent. This low figure is not surprising when you consider that the incidence of cancer of the cervix in non-pregnancy is also low in the younger age groups into which most of the child-bearing women fall. Thus, the cases of malignancy and pregnancy combined are limited to only a small group of these, who are potential candidates for either condition.

Since 1921 in the Elizabeth Steel Magee Hospital, Pittsburgh, there have been four cases of carcinoma of the cervix uteri complicated by pregnancy. The only one of the four patients now alive is Mrs. A. M., aged 35, admitted June 9th, 1942, a para three, with a diagnosis of pregnancy of two months and a possible carcinoma of the cervix, which was disclosed as a growth the size of a walnut ( $2\frac{1}{2}$  cm. in diameter). Clinical diagnosis was fibroma of the cervix with cervical erosion. Frozen section and permanent section of tissue revealed a non-cornifying type of squamous-cell carcinoma of the cervix. The patient received 13,300 R units of radiation through the intracavitary cone directly onto the lesion from June 16th to September 4th, 1942. She was delivered by cesarean section with a ligation and resection of the Fallopian tubes December 30th at eight months gestation. Biopsy of the cervix and endometrium April 10th, 1945, disclosed no evidence of malignancy. At this time the cervix was deeply cauterized.

A second case was that of Mrs. A. S., aged 28, admitted August 20th, 1939, with a diagnosis of advanced inoperable carcinoma of the cervix, non-cornifying squamous cell type and pregnancy, seven months. Classical cesarean section was performed followed by x-radiation treatment over the abdomen and pelvis and through an intravaginal cone. 9300 R units were administered through the latter. Over six external ports 13,200 R units were given. The patient died eight months later, April 18th, 1940.

The third case was that of a woman, aged 27, admitted January 6th, 1944, with a history of having had a vaginal operative delivery in October, 1943. Examination on admission re-

vealed many irregular tumor masses through the vaginal canal. There was an abscess in the perineum. Biopsy of tumor masses from vaginal wall and abscess cavity revealed a keratinizing type of squamous-cell carcinoma. The patient received 1000 mg. hours of radium to the cervical canal and 5800 R units of x-ray through the intracavitary cone onto the cervix. 300 R units of x-ray were given externally. She died April 21st, 1944.

The fourth case was that of Miss E. F., aged 41, admitted August 30th, 1944, with a diagnosis of pregnancy four months and a large cauliflower growth involving the cervix, histological section of which disclosed a non-cornifying type of squamous-cell carcinoma. She was treated with x-radiation through the intracavitary cone receiving 12,000 R units from September 13th, 1944, to October 4th, 1944. She was discharged October 8th, 1944, and was readmitted October 17th. She aborted October 21st, 1944. A 30 cm. fetus was discharged following this. Readmitted December 10th, 1944, the patient received 1800 m. hours of radium to the cervical canal. Final admission was February 16th, 1945, and death occurred April 13th, 1945.

#### SUMMARY

1. In a group of 100 cases the more common complications involving the urinary and intestinal tracts are given.

2. Complications of pelvic irradiation include intestinal obstruction, ureteral stricture, cystitis, unusual bleeding and pain and fracture of the femoral neck of the femur.

3. Vesico-vaginal and recto-vaginal fistulae occur in both untreated and treated cases. The primary destructive agent is considered to be the malignant growth.

4. Ureteral obstruction must be assumed as a definite hazard in the treatment of cervical cancer by radium and x-ray. Literature on this subject and the personal observation of the writer have indicated that this is a frequent aftermath of heavy irradiation of the cervix.

5. Ureteral damage is believed to be a far more serious and frequent complication of irradiation therapy of cervical cancer than bowel or bladder damage.

6. Because of the high incidence of ureteral occlusion confirmed by other writers on this subject it is important that complete urological investigation be obligatory in the management of cervical carcinoma.

7. Each patient presents a possibility of preventable lethal complication of the urinary tract. If these are diligently sought for and proper steps instituted in time, many lives will thus be saved.

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Table III

## COMPLICATIONS

Clinical Grading	Total No. Cases	Progressive Anemia	Septic Temperature	Radiation Sickness	Vesico-Vaginal Fistula	Recto-Vaginal Fistula	Metastases	Syphilis
I	11	1 (9%)	2 (18.2%)		1 (9%)			
II	18	5 (27.8%)	3 (16.7%)	1 (5.6%)	1 (5.6%)	1 (5.6%)	4 (22.2%)	2 (11.1%)
III	22	9 (40.9%)	12 (54.5%)		1 (4.5%)	2 (9.1%)	8 (36.4%)	1 (4.5%)
IV	49	23 (46.7%)	28 (57.1%)	2 (4.1%)	5 (10.2%)	4 (8.2%)	22 (44.9%)	5 (10.2%)

Table IV

## INTESTINAL TRACT COMPLICATIONS

Clinical Grading	Total No. Cases	Melena	Diarrhea	Stricture	Ulcer	Tumor Invasion
I	11		1 (9%)	1 (9%)		
II	18	1 (5.6%)	1 (5.6%)	2 (11.1%)	1 (5.6%)	1 (5.6%)
III	22	1 (4.5%)		3 (13.6%)	4 (18.2%)	2 (9.1%)
IV	49	3 (6.1%)	4 (8.2%)	2 (4.1%)	3 (6.1%)	4 (8.2%)

Table V

## URINARY TRACT COMPLICATIONS

Clinical Grading	Total No. Cases	Cystitis	Bladder Tumor Invasion	Ureteral Obstruction
I	11	1 (9%)		2 (18.2%)
II	18	1 (5.6%)	1 (5.6%)	5 (27.8%)
III	22	1 (4.5%)		7 (31.8%)
IV	49	12 (24.5%)	1 (2.04%)	24 (48.9%)

Table VI

SURVIVAL RATES BY AGE GROUPS

Age (Yrs.)	Cases (No.)	5 yr. Survivals	Percentage
30	2		
31-35	15	4	26.6%
36-40	11	5	45.4%
41-45	13	7	53.8%
46-50	12	6	50.0%
51-55	17	6	35.3%
56-60	17	5	29.4%
61-65	7	4	57.1%
66-70	5	2	40.0%
71-75			
76-80	11		

Table VII

Clinical Grading	Total No. Cases	Average Age	Race		Average Para
			White	Colored	
I	11	47	9	2	5
II	18	48	17	1	4
III	22	47	16	6	3
IV	49	50	35	14	4

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# DEPARTMENTS

## HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

### THE CALL TO THE BOATMAN

"Tut. I am in their bosoms, and I know wherefore they do it."

THE several individuals within the spacious home of John Gilbert Winant in Concord in New Hampshire on that recent quiet Sabbath day were not also within the bosom of the master of the house: had they been so embosomed the gentleman of international distinction would have been prevented from terminating suddenly and violently his own life.

The command to knock and the door shall be opened does not refer to the door that affords entrance of one mortal into the mind of another mortal. Even those wholly untrained in the functioning of the human mind realize that man is constantly on the alert to keep the door of his own mind closed to those who would seek to know his inmost thoughts. He is often unwilling to know them himself. Man's mind put into obvious action through bodily movements manifests behaviour that all may look upon. But civilization is so insistent that the individual's conduct be in conformity with that of the surrounding society, that all behaviour is affected by what is repressed.

And repression is highly important. Were man to give full rein to all the impulses that are constantly demanding release, chaos would prevail.

The former Governor of New Hampshire had reached the age of 58. When he sent the bullet through his brain he was alone in a room in his spacious and luxurious home. But others were in the house. There can be only speculation about what took place in his mind that caused him to decide to take his life. He acted in multiple fashion as arresting officer, prosecutor, defender, jury and judge. From his decision resulting from his own trial of himself there could be no appeal. He prosecuted, defended, heard evidence, evaluated it; and he sentenced himself and executed the sentence imposed by himself upon himself. By what process of reasoning could he have decided that both he and the world would be each the better off if he were removed from it? He was well born, well educated, wealthy, and popular. He had long been unselfishly concerned about the problems of society. He had taught, he had been a legislator, governor, business executive and servant of the people in many difficult positions. In the first World War he was a valiant soldier. Finally, he

served as ambassador to England. He had those attributes that enabled him to work cordially with those of the opposite political party. He had come to symbolize high intelligence and unselfish devotion to the cause of mankind. Neither his conduct nor his motives were ever subjected to hostile criticism. Could Governor Winant have been able on that late Sabbath afternoon to adopt as his own opinion of himself the high opinion the American people had of him, he would undoubtedly now be happily alive.

Many individuals have discussed with me their recurrent or continuous thought about suicide. Occasionally, in the nick of time, I have withheld the individual's hand from dealing himself the death-blow. Oftener, perhaps, I have resuscitated the weary and frustrated mortal whose assault upon himself had not been quite successful. Not long ago a young man within a few minutes after a cheerful conversation with me sent a bullet clear through his head. As I felt the flickering pulse and witnessed his last breath, I wondered why he had not turned the weapon against me rather than against himself. And more recently the sun rose in splendor upon the body of the young man whose conversation at midnight was philosophic and calm and serene. Yet he and I knew that he was interdigitating less and less comfortably and with less and less self-approval into a society that seemed hopelessly adrift. In a final effort to make complete his removal from the cosmos that had afforded him so little satisfaction, he left the insistent request that his corpus be incinerated. Within a few hours, what had been his physical body was transformed into a few ounces of ashes. Was he the better off when ashes than when he had been flesh and blood and bone? During his university career he built up such a record of academic achievement as the institution had not known for many a decade. But his ever-increasing store of knowledge afforded his soul no comfort. He staked his all on a complete change of habitat. Where is he and how is he? The echo is re-echoed.

It is probable that man is driven to commit suicide because continued association with himself has become intolerable for him. He may be impelled to try to rid himself by the development of a delusion. He may have formed the opinion that he has become a bad man, unfit for association with others and with himself. He may honestly believe that he is a bad man, a moral degenerate, or a criminal, and that he has always been a hypocrite. The higher the station occupied by man the more dreadfully he would suffer from such a delusion. Ideas of self-depreciation are not unusual. The depressed and melancholy often develop delusions of great sinfulness. Individuals in such condition may resort to suicide for the double

purpose of removing themselves from life and from association with others; and suicide does afford them the means of punishing themselves for the wickedness they suppose themselves to be guilty of.

I do not think of suicide, or the attempt at it, as a manifestation of cowardice. Few individuals awaiting legal execution possess sufficient courage to thwart the executioner. I do not think the person who takes his own life is consciously inconsiderate of others. Not infrequently the delusion that the individual is unfit to associate with others manifests itself by his removal of himself from the human family.

The homicidal person is hostile to others, or to another; the suicidal individual directs his hostility against himself. Normal man clings tenaciously to life. It is probable that suicide results from judgment impaired by morbid mentality. In the depressed and melancholy, suicide should always be thought of as a possibility.

## HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

### WHAT TO DO ABOUT RECORDS

THE WORST HEADACHE that Hospital Administrators have is more likely to come from the Records Department. The reasons are two. First, the recording is done, or supposed to be done, by the senior staff, the junior staff, the intern, the historian, the nurse, the laboratory technician, the operating room supervisor, and the x-ray technician; second, the hospital is approved or not approved by the American College of Surgeons largely by its records. The writer offers a few suggestions which, if followed, would at least produce better results than we are now having.

It is obvious that where so many people are involved the matter of discipline, rules and regulations plays a large part. This is particularly true where professional people are concerned, such as the R.N. and the M.D., and particularly the M.D. The staff doctors will readily agree with the Administrator that the records must be kept up; but keep their fingers crossed when saying so, thereby meaning that they should be kept up on the other fellow's patients but they are just a little too busy and have too large a practice to keep up their records.

What, then, can be done and how shall we do it? The first and most important thing for the hospital administrator to do is to get permission from the Board of Trustees to institute definite rules concerning the histories, with penalties for violation of these rules which, automatically, temporarily take away "hospital privileges" from the staff member. *The rules and regulations should be*

*printed in italics on the blank upon which the doctor makes application for "hospital privileges," and at the bottom of these rules should be a place for him to sign his name agreeing to abide by them.*

How can we help doctors to remember this agreement? One way is to read out the names of the doctors who are up with their histories at the monthly staff meetings. Another way is to provide a competent historian who can take shorthand and who is available to make rounds with the doctor when he examines his patients. Another way is to provide a quiet room with a dictaphone in it, so that the doctor, at any time that it is convenient for him to do so, can dictate history and physical examination on his patient, together with any notes. Another way is to have a red slip attached to the front of the patient's chart with a clip, with the words, "You are behind, Doctor, with your histories." A blue slip to be substituted when he has caught up, stating, "You are up with your histories." The Medical Staff should be continually reminded of the fact that, staff promotion in the hospital will come only to those who keep up with their histories and physicals. If all of the above fail, there is nothing left for the hospital authorities to do but to automatically suspend hospital privileges temporarily.

The suspended M. D. becomes indignant and, all too often, heaps abuse and criticism upon the admitting officer. If the abuse is beyond the pale of decency then, of course, disciplinary action should be brought against the doctor, and unless he sees fit to apologize, he should be permanently dropped from the staff.

The remedy for this profound hospital evil lies with the Administrator. He should first see that reasonable rules and regulations are passed by the governing body of the hospital. He should next determine beyond all doubt that he is the enforcement officer in regard to the rules, and last but not least he should be firm and impartial with all members of the staff. No amount of argument, or criticism, or abuse, should deter him from enforcing this all-important rule for the successful operation of any approved hospital.

## PEDIATRICS

### PNEUMONIA IN CHILDREN

THE PNEUMONIA SEASON is upon us. Reading's<sup>1</sup> article is abstracted for the good of little folks.

With pneumococcus pneumonia sudden onset and continued high fever is usual in the child, but frequently temperature is intermittent with a lobar consolidation, and that type of fever in the bronchopneumonic form is to be expected.

1. Boyd Reading, Galveston, in *Texas Reports on Biology & Med.*, Vol. 5, No. 3.



Vomiting, diarrhea and anorexia may mask the prepneumonic symptoms to some extent. Early symptoms may be indistinguishable from those of meningitis and sometimes it is impossible to make a diagnosis unless a lumbar tap is done and the fluid carefully examined. Convulsions or meningismus, neck and other meningeal signs are fairly frequent in pneumonia.

The child as a rule does not have sputum. The sputum is swallowed. The stabbing pain in the chest is not uncommon in children. Cough is not a common symptom: a child may go through his pneumonia, particularly lobar, and have no cough at all. Symptoms of importance are shallow respiration, tendency to splint the affected side, dilatation of the alae nasi, and the grunt. Physical signs in the lobar type on the affected side is suppression of breath sounds, usually fine moist rales which may be transitory, consolidation and as that disappears the lungs clear rapidly with few or no rales returning. In the bronchopneumonic type there are usually bilateral rales, although they may be limited to one side only, usually at the bases but may be heard top to bottom. Consolidation can rarely be detected by any clinical means unless there is a confluency of the bronchopneumonic process. Most children will have a leukocytosis; 10 to 20 per cent will have a blood stream infection and in those cases the mortality rate is high.

In taking the culture for type use a flexible wire with a swab. Take the culture from the nasopharynx, then make inoculations on the proper media. A shift of the heart is important in the diagnosis of the condition. A child often complains of acute abdominal pain with early pneumonia. Otitis media, catarrhal with red ear drum, is present in nearly all cases. The suppurative types and mastoiditis are rare since antibiotics are used.

Tympanites indicates a serious infection and energetic treatment for relief should be started early. Prostigmine and the rectal catheter are useful. In the infant energetic treatment must be started early. In the lobar type the mortality even before we used penicillin and the sulfa drugs was extremely low.

Sulfadiazine works very well and it should be tried first. If no response follows penicillin should be used. With sulfadiazine, 100-200 mgm./Kg, orally; if not effective or if baby is extremely ill, then intravenous or subcutaneous use is advised. If penicillin is given, intramuscular route should be used. Type specific antiserum is rarely necessary. If no response to the antibiotics in severely ill children, it may be used effectively.

Oxygen is usually begun too late. If the body is restless, thrashing about and breathing rapidly O should be administered by tent, mask or nasal catheter, not waiting for cyanosis. It is the best sedative we have in such cases.

*Streptococcus pneumoniae* is usually secondary, to measles, whooping cough, influenza or the common cold and it usually results in interstitial pneumonia. The child is usually severely ill, about the only difference from ordinary bronchopneumonia. Diagnosis is established only by culture. The treatment of choice is penicillin.

*Staphylococcus pneumoniae* is most prevalent in the first few months, tendency toward abscesses in the lung and empyema. Penicillin is the drug of choice.

*Hemophilus pneumoniae* may start as an influenza, then with secondary invasion become a mixed infection. There is distressing dyspnea; cyanosis, then pallor. Streptomycin seems to be the drug of choice, with specific antiserum and perhaps sulfadiazine.

In kerosene pneumonia, aspirated oil and not the oil that enters the stomach does the harm. Give an emetic rather than use a stomach tube. There is usually suppression of breathing at first, then drowsiness, then fever and then bronchopneumonic manifestations.

Lipoid pneumonia affects those babies who take cod liver oil and rebel against it, and those who are given oily nose drops. Little can be done to stop it. The x-ray picture is rather conclusive.

In eosinophilic pneumonia x-ray picture looks like miliary tuberculosis in children who have allergic manifestations; it will last a few days to several weeks and then it clears up. The treatment is that for any allergic state.

## TUBERCULOSIS

### EARLY DIAGNOSIS AND TREATMENT OF PRIMARY PULMONARY TUBERCULOSIS IN CHILDREN

A MEATY current article<sup>1</sup> presents the duties of the physician as to recognition and management of tuberculosis in the young child. Attention is specially called to its emphasis on finding the source and stopping the spread.

Children seldom have symptoms which arouse suspicion of the existence of tuberculosis. Physical examination, except insofar as it gives evidence of the general health of the child of far advanced tuberculosis, is practically useless in the diagnosis of the usual case. Ordinary chest roentgenograms are normal in the majority of children who have, or have had primary tuberculosis. A positive tuberculin test is almost essential for a correct diagnosis and the tubercle bacillus in the child is usually found by examination and culture of the gastric washings. The chief treatment for primary tuberculosis is to insure an environment free from contact with cases of tuberculosis in the communi-

1. J. G. Hughes, Memphis, in *Jl. Okla. Med. Assn.*, Oct.

cable stage.

The chief screening agent to find out which children have, or have had, tuberculous infection is the tuberculin test. The two types now generally used are the intradermal tuberculin test and the tuberculin patch test.

The patch test, properly applied, detects 90 per cent of children who have, or have had, tuberculous infection, and corresponds with the 1:1000 intradermal test with old tuberculin. The author begins with the patch test. If the patch test is negative, 0.05 c.c. of second strength purified protein is used intradermally.

If precautions have been observed not to use a testing solution so strong that it is antigenic in itself, a positive tuberculin test simply means that at some time in the past life of the individual he has been infected with tubercle bacilli, and has, therefore, become allergic to tuberculoprotein.

Primary pulmonary tuberculosis in children differs greatly in its clinical manifestations from the reinfection type of tuberculosis in adults and older children.

Since clinical symptoms are often lacking, physical findings usually normal, and chest x-ray films frequently negative, the chief agent available to determine which children have been infected and which have not is the tuberculin test. This test should be applied to all children, beginning at 18 months to two years of age, and should be repeated every two or three years if negative.

A positive tuberculin test in a child requires a follow-up to determine whether or not a tuberculous focus exists in a member of the family, and necessitates study of the child from the standpoint of location and extent of the lesion and degree of activity, with special reference to whether the child can spread the disease to others.

For tuberculin-positive children without clinical evidence of the disease, or with x-ray evidence of healed lesions, treatment involves breaking any contact that exists between the child and tuberculous adult, supervision of the health of the child so as to avoid malnutrition, fatigue, and intercurrent infection, and yearly chest roentgenograms to pick up any reinfection type lesion at an early stage when treatment will be most effective. This is especially true in the prepuberty and puberty periods.

When clinical activity exists, treatment consists essentially of bedrest, proper nutrition, avoidance of tuberculous contact, symptomatic treatment as required, and, possibly in certain cases, the use of streptomycin. After clinical activity has ceased, the same health supervision is given as for the tuberculin-positive child without clinical activity. Serial chest roentgenograms are of special significance in these cases.

## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

### TREATMENT OF RHEUMATOID ARTHRITIS WITH A BETTER GOLD SALT

MOST of those who have tried out various special treatments for rheumatoid arthritis, including gold therapy, have obtained results no better than from old methods, *i.e.*, results very unsatisfactory.

A Chicago investigator,<sup>1</sup> observing that gold salts offered the best hope of bringing about clinical improvement, but the greatest danger of serious reactions, tried a different class of gold salt, and now reports encouraging results.

The gold compounds previously available have been, for the most part, water-soluble compounds which are absorbed rapidly and give high concentrations of gold in the plasma. For the past three years the writer has been using a gold preparation of a different type. The clinical results have been generally satisfactory, and the incidence of toxic reactions has been low. The preparation is aurothioglycolanilide, a suspension in sesame oil, available under the trade name of Lauron\* which contains 54.3 per cent of gold, is insoluble in water and organic solvents. Stengel and Robinson have reported good clinical response to this salt, and a rather low incidence of toxic reactions.

To date, 91 cases diagnosed as rheumatoid arthritis have been treated. Results: complete or practically complete symptomatic relief in 73 per cent; moderate improvement in 11 per cent. The criteria of improvement have been relief of pain and restoration of motility in the joints involved. The incidence of toxic manifestations has been low. A number of the cases in which good clinical results were obtained were of many years standing, and two patients who had such severe generalized arthritis that they were bedridden have freedom from pain and a fairly normal range of motion in most of the joints which had been affected.

The diagnosis was based on a history of pain, swelling, and limitation of motion of several joints with characteristic fusiform swelling of the fingers when these were involved, muscle atrophy about the swollen joints, and an increased erythrocyte sedimentation rate. Only 12 of the 91 cases were in males. The age range was 20 to 78, duration of symptoms a few months to 20 years.

Before instituting treatment, complete blood counts were made, urinalysis done, and sedimentation rate determined: all repeated at monthly intervals throughout treatment. The Lauron was given by deep intragluteal injection, twice weekly. The dosage schedule followed in the majority of

\*The author is indebted to Endo Products, Inc., for the supplies used in these cases.

1. P. A. Rose, Chicago, in *Ill. Med. J.*, Sept

cases consisted of two doses of 10 mg. each, then two of 25 mg. each, followed by increases of 25 mg. per week, to 100 mg. per dose. In the earlier part of the three-year period, the maximum dose used was 150 mg. twice weekly. When it was noted that the results were about as satisfactory from smaller doses, the maximum was reduced to 100 mg.

The maximum dose was continued twice weekly until satisfactory clinical improvement was obtained, or a total of 5,000 mg. had been injected. In most cases, there was sufficient improvement from the first course to make it unnecessary to give any additional gold. In a number of instances, the improvement continued during the post-treatment period, so that some patients who had originally been scheduled to take a second course, became symptom-free in the interval. Eleven patients were given a second course after a rest period of two or more months, and in two cases a third course was given. Ultimately, these last two cases obtained practically complete freedom from the symptoms of arthritis.

The largest amount given without a rest period was 5,270 mg. The largest total amount given to any patient was 15,155 mg.

Complete symptomatic relief was obtained in 44 cases, and marked improvement in 22 others, making a total of 73 per cent of satisfactory clinical results. No improvement was seen in 11 per cent.

Age, duration, and severity of symptoms apparently were without significant influence on the results obtained. Toxic manifestations were few in number and not serious. Only one case showed residues, in the form of pigmentation of the skin. No evidence of effects on the bone marrow was seen.

In the majority of cases which ultimately showed improvement, an acute exacerbation of symptoms followed the beginning of treatment. This subsided in about two months, after which most patients were free of pain referred to the joints.

The preparation seems to have a sufficiently wide margin of safety to make it generally useful for the treatment of rheumatoid arthritis.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### THERAPEUTIC EMERGENCY MEASURES IN BRONCHIAL ASTHMA

ALL OF us have to take care of asthmatics in emergencies. Reading carefully the advice of Haplin<sup>1</sup> will enable us to best perform this service.

A brief history must be taken. The patient may have knowledge of a distinct sensitivity for the

1. L. J. Haplin, Cedar Rapids, in *Jl. Iowa Med. Soc.*, Oct.

very drug the physician had intended to administer. Environmental correction can best be achieved by removal to a hospital. Dietary management and the institution of an elimination routine are better controlled in hospital. The severity of symptoms will, to a great extent, determine whether such admission is a necessity. In all asthmatics feather and dust removal and/or control is demanded so far as possible.

Relief of dyspnea and coughing will permit the usual patient to rest. Sedation must be cautious. Medication should be ordered so as to permit maximum rest periods.

Dehydration is a factor too important to be overlooked. Replacement of tissue fluid can be accomplished by intravenous, subcutaneous or other parenteral route. Glucose, 5 per cent or 10 per cent in saline intravenously, to which other medication can be added, is preferred. Often glucose and saline will thin thick sputum to permit expectoration of bronchial plugs and tenacious mucus. Vitamins B and C may be added to this solution, but sub-sequent insulin is not needed nor indicated.

Inhalation treatment is indicated in two groups of bronchial asthmatics uncontrolled by allergically directed therapy. In the first, oxygen alone or with added gases, to prevent asphyxia. Intractable asthma, however, may produce no cyanosis nor evidence of anoxia. In the second group, the basis for oxygen use is pulmonary emphysema which develops frequently in patients who have been subjected to prolonged constriction of the bronchial muscles.

Epinephrine hydrochloride 1-1000 is the drug of choice in offering relief to the patient. A dosage of 0.25 c.c. may be repeated at 30-minute intervals for four to six injections, if necessary, subsequent interval according to severity and persistency of symptoms. Contraindications for larger dosages or continued use of the drug will be shown by a persistently rapid pulse rate, nervousness, headaches, and failure of relief.

In association with the use of epinephrine or in substitution for it, aminophyllin intravenously holds more promise than more radical measures. Slow, cautious administration of  $7\frac{1}{2}$  gr. in 20 c.c. fluid is advised; repeated in four to six hours if needed.

Oxygen inhalation by nasal catheter at rate of five to seven liters per minute can be instituted with the above medication. Maintain an adequate fluid intake and balance. Intravenous saline or glucose may be necessary.

Do not depend entirely upon any oral medication to relieve the symptoms of acute, severe bronchial asthma. Ephedrine or aminophyllin orally are best used as routine measures of prevention.

Nebulization of epinephrine 1-100 should be employed in much the same light as oral medication, i.e., as a preventative aid.

Do not prescribe morphine. Demerol is far superior and possesses a greater margin of safety.

Do not rely upon benadryl and pyribenzamine to release the bronchial constriction of asthma. Such reliance will lead to disappointment.

Consider environmental, dietary and general corrective measures for future attention.

Close observation and discontinuance of non-effective measures are essential. An injustice to the patient is done if the physician merely prescribes routine procedures and returns in a matter of hours for readjustment of his therapeutic schedule. Caution must be exercised to avoid over treatment and the use of measures that fall into the "heroic" category.

### NEOSTIGMINE FOR BLACK WIDOW SPIDER BITE

NO REALLY SATISFACTORY method of treating black-widow-spider bite has been worked out. Beck<sup>1</sup> notes that in 1945 the successful use of neostigmine was reported in one case, and Beck adds another report.

A 44-year-old white man, at 5:30, was bitten on the penis by an insect while he was in the privy. The insect was not identified, but there were many spider webs in the privy. The bite was moderately painful for a few minutes. By 7:00 a. m. he was having some pain in the low abdomen and hips. By 8:30 abdominal and leg pains were severe and he reported off from work. The abdominal pain was constant, but shifted from place to place. He was unable to sit or lie down quietly, but felt it necessary to move around for partial relief.

Seen at 10:30, he was restless, anxious and in obvious pain; abdomen rigid, but not tender to pressure. There was a macular area 0.5 x 0.5 cm. on the ventral surface of the penis where he had been bitten. A diagnosis of arachnidism was made.

Two c.c. neostigmine methylsulfate given at once gave moderate relief of pain in 30 minutes. At 11:15 1 c.c. was given. He was completely free of pain by noon.

He was allowed to go home with instructions to take neostigmine bromide 15 mg. by mouth q. 4 h. A codeine preparation was given, to be used if needed. The following day there was moderate aching in the legs for which he took a total of three doses of codeine. At no time did he have a recurrence of abdominal pain. Three days after the bite he still felt entirely well and planned to go to work the following day. When questioned specifically if he thought hospitalization would have helped in any way, he replied in the negative.

1. J. T. Beck, *Desam. in U. Med. Assoc. Gaz.*, Sept.

## DENTISTRY

J. H. GILSON, D.D.S., Editor, Charlotte, N. C.

### TOPICAL SODIUM FLUORIDE MAINTAINS ITS RECORD OF PREVENTION OF DENTAL CARIES

MANY REPORTS over the past few years attest to the value of the use of fluorides as preventives of tooth decay. Further Public Health research<sup>1</sup> is confirmatory.

The treatment consisted of isolating the teeth of the treated side with cotton rolls, drying with compressed air, and wetting the crown surfaces with the fluoride solution. The solution was allowed to dry in air for four minutes; then the cotton rolls were removed and the child dismissed. In general, the treatments were given twice a week over a one-, two- or three-week period.

One year after the series of fluoride applications were completed, the teeth of the children in the six treatment groups were reexamined, at which time the examiner had no knowledge as to which teeth had been treated and which were untreated. Of the 1,782 children included in the initial study groups, 1,555 were reexamined.

A study of the incidence of dental caries in six groups of children in Miami County, Ohio, in which three of the groups received two, four and six topical applications of a 2-per cent solution of sodium fluoride; and three groups received two, four and six topical applications of a 0.06-per cent lead fluoride solution to the teeth in half the mouth is presented and analyzed. The fluoride treatment series was preceded by a dental examination and prophylaxis and applications were made at the rate of two per week. The follow-up examinations were made one year after completion of the fluoride treatments. The teeth in the untreated upper and lower mouth quadrants served as controls.

Analysis of the data for the first study indicate:

1. The incidence of initial caries in permanent teeth noncarious at the time of treatment with two, four and six topical applications of sodium fluoride, was 21.7, 40.7 and 41.0 per cent less, respectively, in treated than in untreated teeth.
2. The number of additional permanent tooth surfaces which became carious in previously carious teeth during the one-year period was 1.2, 25.9 and 14.0 per cent less in sodium fluoride treated carious teeth, given two, four and six applications, respectively, than in untreated teeth.
3. The results of this investigation together with those of studies previously reported indicate that four topical applications of sodium fluoride preceded by dental prophylaxis affords maximum reduction (40%) in dental caries incidence.

1. D. J. Galagan & J. W. Knutson, in *Pub. Health Rep.*, Oct. 1946

Two, four and six topical applications of a 0.06-per cent solution of lead fluoride are not associated with a significant reduction in the incidence of dental caries.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### PROSTATIC DISEASE AND ITS TREATMENT

THE following is a summary of a first-class coverage<sup>1</sup> of disease of the prostate gland and its proper treatment.

The main types of prostatic lesions that cause obstruction of the bladder neck and require surgical intervention are five in number:

1. Subcervical group enlargement.
2. Benign adenomatous hypertrophy: a) intravesical, with and without residual urine; and b) extravascular, with and without residual urine.
3. Median bar.
4. Cancer: a) carcinoma—adeno-, scirrhous, or medullary; b) rhabdo-myo-sarcoma.
5. Calculus.

Benign hypertrophy of the prostate almost always occurs in the middle and lateral lobes; the anterior lobe is rarely affected and the posterior lobe virtually never.

The part which enlarges most frequently is really a contiguous structure—the subcervical group of tubules. These tubules are found to be enlarged in 25 per cent of men over 30 years of age. This enlargement may occur without hypertrophy of the prostate; but when the prostate proper is enlarged, the subcervical group will also be hypertrophied.

Median-bar obstruction presents the same clinical picture as prostatic hypertrophy, except that the patients are usually younger. The operation of choice is transurethral resection.

Carcinoma of the prostate is often associated with benign hypertrophy. In over 75 per cent of cases the cancer begins in the posterior lobe—the portion of the gland that is not affected in benign hypertrophy—and consequently does not produce symptoms of urinary obstruction until it has extended into the lateral and median lobes. In the remaining 25 per cent of cases the origin of the cancer may be in the lateral, anterior, or median lobe, and obstruction of the bladder neck is then likely to occur earlier.

Prostatic sarcoma is very rare and may occur at any age, including infancy, and grow rapidly and to large size, producing obstruction to both urination and defecation.

Prostatic calculi are usually multiple and scat-

tered throughout the parenchyma of the gland. Occasionally there is a single large calculus or a large stone and a cluster of small calculi. Benign adenomatous hypertrophy and prostatic calculosis frequently coexist, and the calculi will then usually be found, not within the adenoma, but between it and the capsule, embedded in the remnants of the true prostate.

By the use of the cystoscope and the cystourethrogram it may be determined whether the obstruction is large or small, intravesical or extravascular. By rectal palpation or biopsy it may be determined whether the enlargement is benign or malignant. These are the factors that should decide which operation shall be performed. The condition of the patient, as shown by the general physical examination, blood chemistry studies, the electrocardiogram, and the psp. test of kidney function will indicate whether the operation shall be one-stage or two-stage.

The authors' experience of the last 10 years with surgery upon the prostate gland—1696 operations performed; 1049 transurethral resections (62%). 405 perineal prostatectomies (24%).

242 suprapubic prostatectomies (14%).

In this entire series the mortality rate has been 3.5 per cent, the highest in patients who suffered with carcinoma, as would be expected.

The large number of transurethral resections is accounted for by the fact that now many patients are operated upon who formerly would not have been operated upon at all. This is made possible by improvements in instruments, by the fact that both medical men and laymen have become alert to the symptoms and that laymen no longer fear operation. The wide publicity given the various methods of prostatectomy, in both medical journals and the lay press, has resulted in great benefit to this class of sufferers.

### SKIN TEMPERATURE AS A VALUABLE AID DURING ANAESTHESIA

AN ENGLISH surgeon<sup>1</sup> has used a skin thermometer on a great many surgical patients, including most bad-risk cases, for three years and he has come to rely more and more on these readings together with those of the blood-pressure, etc., as an indication of the patient's general condition and need for resuscitative measures.

Technique.—A mercury-in-glass thermometer is used. This is made without a constriction and reads from 80 to 107° F. The bulb is in ring form and partly enclosed in a reflecting hemispherical case, making with the patient's skin a reasonably airtight fit, thus avoiding changes in the readings due to draughts, etc. The thermometer is attached by elastoplast to the patient's forehead. This position

1. J. Clutton-Brock, in *Proc. Royal Soc. Med.* (Eng.), Aug.

1. O. S. Lowsley & Alberto Gentile, New York, in *Geriatrics*, Jan.-Feb.

is chosen because the skin of the forehead shows least response to environmental changes in temperature.

There is considerable individual variation in the skin temperature of the face in normal patients, so, within limits, changes in temperature rather than absolute readings are considered to be of significance. The constriction of the vessels of the skin is one of the compensating factors in shock, and this investigator thinks a measurement of this vasoconstriction is, to a close approximation, a measurement of the degree of shock present.

The skin tem. of the patient's face, it is said, usually rises with the induction of any anaesthetic, the absence of this vasodilation apparently having a grave significance. After this initial rise, it will remain steady unless shock occurs when it may fall. A fall of 1° F. or less is of minor significance, but 3° or more shows a considerable degree of shock.

The variation in skin temperature, so we are told, bears very little relation to that of the blood-pressure. A very considerable fall in blood-pressure may occur without a fall in skin temperature. In one case the patient's blood-pressure fell to 40 mm. systolic and 20 mm. diastolic after a high spinal for a combined synchronous excision of the rectum. The blood-pressure remained at this level for more than one hour. Provided that there has been no fall in skin temperature, Clutton-Brock has never found any harm come to a patient, whatever his blood-pressure. When, however, the blood-pressure and skin temperature have fallen together, the patient has been critically ill and needed energetic resuscitation.

In some cases a sustained blood-pressure, or even a rise, has been seen with a fall in skin temperature. Presumably the vasoconstriction which causes the fall in skin temperature also sustains the blood-pressure. The patient in these cases has been shocked but has compensated well for his shock; however, it is important to realize that the condition of shock is present and that the patient requires careful watching.

It is concluded that, by taking skin temperatures we can distinguish between falls in blood-pressure due to shock and falls due to other causes of little significance. With skin temperature and blood-pressure readings together the patient's need for resuscitation can be better judged.

This certainly appears to be worthy of testing out. Few there be on this side of the Atlantic who could regard such falls of blood-pressure with equanimity.

from hypoglycemia, 4.1% from myocardial insufficiency, 11.2% from coronary disease, 5.4% from apoplexy, 0.7% from uremia. Approximately two-thirds of the subjects died of some complications related to diabetes.—E. T. Bell.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### COLOSTOMY

THE FACT that a properly functioning colostomy is readily tolerated, and only a slight handicap, is not fully appreciated by many of the medical profession, as well as by the laity. Lack of understanding deters many from submitting to this procedure which is necessary in the cure of certain diseases and an important palliative measure in the treatment of others. In a recent issue of the *Lahey Clinic Bulletin*, Dr. Frank Lahey<sup>1</sup> discusses the subject from this standpoint.

It is first pointed out that the colostomy is unjustly blamed for many troubles which should properly be attributed to the underlying disease. This is especially the case when it is used for palliation only. The natural tendency is for the patient to consider the colostomy at fault.

The making of a colostomy has an important bearing upon its function. It is best placed on the anterior abdominal wall in the midline, or somewhat to the left. Placing it too near the anterior superior spine interferes with a snug dressing. The mucosal level should be well above the skin, thus reducing the likelihood of stricture formation at the orifice. For the same purpose the patient should be instructed to insert his little finger, gloved and well lubricated, at intervals of one to several days.

Most important in management of a colostomy is regulation of the bowels. A constipating diet must be adhered to. Furthermore, bowel movements should be effected only by irrigation, which is done every one or two days. For this purpose a catheter is inserted, and through it a quart, more or less, of water is allowed to pass into the colon. The discharge is spontaneous, and into a basin. Following a satisfactory irrigation nothing should be heard from the colostomy until the next irrigation. In the interim a smooth flat gauze dressing is all that is necessary, and is preferable to a colostomy cup. In the presence of diarrhea, no method of dressing is adequate, and the patient must remain confined until the attack is over.

For the first few months patients with colostomy need advice and encouragement. Almost invariably they soon learn how to take care of their particular problems, and lead a normal life.

1. Lahey, F. H.: *The Truth About Colostomy. The Lahey Clinic Bulletin*, 5:130-136, July, 1947.

CAUSES OF DEATHS IN DIABETES.—In a series of 606 cases of diabetes studied at autopsy 22.3% died of coma, 10.6% from infections related to the diabetic state, 0.8%

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### AS TO THE DANGERS OF OLD MAIDS BEARING CHILDREN

THE PUBLIC has a feeling that a woman near age 40 years becoming pregnant for the first time is subjecting herself to considerable hazard, and this belief is shared rather generally by the medical profession. Thierstein reviewed all the cases of primiparas, aged 35 or above, delivered at a Nebraska hospital in the three-year period 1944-1946, and gives us the results<sup>1</sup> for our instruction.

The age distribution is from 35 to 43 years, with an average of 38.0 years.

Episiotomies were done in 60 per cent of vaginal deliveries. The remaining 40 had lacerations which necessitated repair. The end result was that, without a single exception, every patient required a perineal repair.

The post-partum period was uneventful for all mothers. Three patients ran a febrile course; two had abdominal sections and one a spontaneous vaginal delivery. The longest hospital stay was 14 days.

Only four infants were being breast-fed when dismissed from the hospital; all others were on formulas. Four infants had nutritional complications, gaining poorly, being 8 oz. or more below birth weight at the age of 10 days. This is a high percentage of nutritional problems. One infant by developing spasticity during the first few weeks of life, gave evidence of birth trauma.

Since age may limit the number of children in the family to one, the infant's importance in these cases is greatly increased. Where there are good reasons to anticipate a difficult vaginal delivery, an abdominal section is more conservative than a prolonged labor with trauma to mother and infant. The decision to do operative procedures is to be made early when conditions are favorable and not as a last resort. Even with modern therapy, cesarean section is not without mortality, and this is especially true if the operation has been long delayed.

Low cervical cesarean section under local anesthesia provides the mother maximum protection against infection. An anesthetic must be employed which in no way impairs the prospects of survival of the infant. One-half of one per cent procaine is used and atropine is the only premedication given. A general anesthetic is a respiratory depressant and will in some cases necessitate artificial stimulants to induce breathing. Spontaneous cry and breathing are very important factors in establishing a favorable outlook for the infant.

Thirty-two primiparas aged 35 to 43 years with

1. S. L. Thierstein, Lincoln, in *Neb. Med. J.*, Sept.

an average age of 38.0 years are reviewed. Following are the findings and conclusions:

Prenatal complications were placenta praevia, prematurity, fibromyomas and a high incidence of toxemia.

Adequate episiotomy is indicated in every vaginal delivery. Laceration occurred without exception where episiotomy was not done.

Average length of labor was 15.2 hours, which is no increase over that of primiparas of all ages.

Type of delivery was spontaneous vertex 40.6%, low-forceps 31.2%, mid-forceps, 6.3%, breech 9.4%, cesarean 12.5%. There were no maternal deaths.

Average weight of infants was 6%. Nutritional complications were encountered in 12.5%. Infant mortality was 3.1%.

The group married 3 to 18 years had more maternal and fetal complications than the group married less than 3 years.

Indications for abdominal delivery are broadened in the elderly primiparas, to safeguard the life of the infant.

Low cervical cesarean section under local anesthesia is recommended, for abdominal delivery, to give greatest protection to both mother and infant.

For elderly primiparas the danger of labor is not materially increased. Prenatal complications are increased by reasons of advance in age. Fetal complications are more numerous.

Here is reliable evidence that the age-old belief, that a woman who married late in life brought forth after her kind at far greater risk than did her younger sister, is but another of things everybody knows to be true, but which are not true.

There is a crying need for a book on the subject.

## PROCTOLOGY

RUSSELL BUXTON, M.D., *Editor*, Newport News, Va.

### BENIGN TUMORS OF THE RECTUM

SIMPLE ADENOMATA are possibly the most common variety of lesions in the lower rectum. Usually the adenomata are sessile and on microscopic examination contain glands. Their importance lies in the fact that about 25 per cent of these growths become malignant. Bleeding is the most common symptom and constipation is next. A diagnosis is made by proctological and sigmoidoscopic examination and a biopsy should always be taken as there is no real differentiation possible between benign and malignant tumors except by microscopic study. Ulceration of either is quite common. Hemorrhage may be quite profuse and infection is almost always present. Desiccation with the electric cautery is the treatment of choice. The rectum is only excised if the growth has replaced the major por-

tion of the tissue. Multiple adenomata are similar to single adenomata, but are not as common, though probably more dangerous, because of the frequency of malignant degeneration. The treatment of multiple adenomata or (as it is commonly called) polyposis of the rectum is unsatisfactory though recently complete removal of the colon has been seen to be of value. Ileostomy or colostomy sometimes helps as a palliative measure.

Endometriosis of the bowel occurs quite often in women particularly between the 25th and 35th year. These patients are troubled with pain in the rectum at the time of menstrual period and the lesion is found most often in the course of a pelvic operation. The treatment consists of the removal of all ovarian tissue, after which time the symptoms disappear. Colostomy is only indicated when the growth threatens obstruction, in which case the colostomy is only temporary and as soon as the ovarian function ceases the tumor involutes.

Lipomata of the bowel are said to be common, but so seldom cause symptoms that they are, in practice, quite rarely seen. Angiomata, fibromata and myomata are extremely rare and are mentioned only to complete the article on benign tumors.

## GYNECOLOGY

ROBERT T. FERGUSON, M.D., *Editor*, Charlotte, N. C.

### CLINICAL APPLICATION OF THE SEX HORMONES IN GYNECOLOGY

IN TOO MANY papers on the distresses of the climacteric treatment is prescribed after a vague fashion. Thomas' dealing with the subject<sup>1</sup> is so definite as to be highly encouraging.

It is in the climacteric, the period of ovarian recession with its attendant pituitary gland over-activity, that hormonal therapy gives the best results.

Of patients passing through this period of life only 15 per cent have symptoms that require treatment. In only a small number is estrogen therapy necessary. This should be given orally; this is most convenient, also it permits medication to be so administered as to insure a uniform rate of absorption.

Of the many commercial estrogenic preparations suitable only three will be discussed. In the climacteric the daily dose adequate to control symptoms for estrone sulfate is 0.3 to .625 mg.; estinyl estradiol, 0.5 to 0.1 mg.; and diethylstilbestrol, 0.1 to 0.2 mg. If the menopause has occurred, the medicine should be given daily for 20 days and rest 10 days. Three or four cycles may be given and the medicine stopped. When symptoms recur, several series may again be repeated. If the pa-

tient is still menstruating, the medicine may be given for 20 days beginning on the fifth day of each cycle, and repeated for three or four cycles.

Estrogenic therapy is for the symptoms resulting from the climacteric. It will not solve all the problems of the middle-aged. Hot flushes are the best indication for estrogenic therapy. The continued periodic injection of estrogens over many months or years is to be deplored. It postpones the final endocrine adjustment.

Adequate doses of oral or parenteral estrogen will stop functional bleeding in two to five days. On stopping estrogen therapy bleeding will begin in one to five days.

The estrogen should be started on the fifth day of the menstrual cycle and continued for 20 days. This may be given in the form of estrone sulfate (Premarin), 3.75 mg. daily; ethinyl estradiol (Estinyl) 0.15 to 0.3 mg. daily; or diethylstilbestrol, 3 to 6 mg. daily. Daily dosage is given in three parts. The progestational steroid should be given from the 15th to the 25th day of the cycle and stopped the same time as the estrogen. Pregneninone (Pranone, Schering; Lutocyclol, Ciba; Progestoral, Roch-Organon) may be taken orally in 10 mg. doses t.i.d. Estrogenic and progestational therapy should be continued for three or four cycles.

Another method of controlling functional bleeding is to give large daily doses of estrogen and progesterone intramuscularly for five days, 10,000 i.u. estrogen, and 20 mg. progesterone injected daily for five days and repeated every 28 days for three or four times. This probably gives equally good results in comparison with the method first described but it entails the use of hypodermic medication.

All women over 35 years of age who have abnormal uterine bleeding should have a curettage to eliminate the possibility of a malignancy.

Testosterone propionate intramuscularly, in 25 mg. doses for three or four times, may effectively stop functional uterine bleeding, but does not correct the abnormal physiology. It is much more expensive than estrogen and is likely to cause virilizing symptoms if given in large doses or over a long period of time.

There is much confusion in the treatment of threatened or habitual abortion by endocrines. At the present time a consistently reliable hormonal therapy schedule is not available. In threatened abortion, besides bed rest and sedatives, 10,000 i.u. estrogen and 10 mg. progesterone may be given intramuscularly one to three times daily until all threats of abortion are over. Then dosage reduced to one injection of estrogen and progesterone every two or three days until after the fourth month of pregnancy.

1. H. H. Thomas, Birmingham, in *Jl. Med. Assn. Ala.*, Oct.



When a patient who has a history of habitual abortion is pregnant, she should be put on estrone sulphate, 3.75 mg., and pregnenolone 30 mg., by mouth daily. This should be continued until after the fourth month.

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

### ANESTHESIA IN DELIVERY

GORDON<sup>1</sup> has very definite ideas on the choice and administration of anesthetics in labor.

No food, liquid or solid, should be given during labor, if birth may be anticipated within 12 hours. If delivery should impend within a period of 12 hours after admission, it should be assumed that the stomach is not empty, and vomiting should be induced if general anesthesia will be administered for delivery. Gastric lavage is seldom feasible, and not so effective.

There is considerable risk in allowing food to any woman in labor once a pattern of regular uterine contractions is established. Intravenous administration of glucose, salt and finally amino acids or plasma will suffice.

Apparatus for suction should be in readiness. The head end of the delivery table should be lower than the foot, or the patient's head, at least, should be lowered through a horizontal to a declined plane. If the character of the respiration is satisfactory, the patient should be carried through the stage of induction as rapidly as possible. If the breath is held, or if attempts at vomiting occur, anesthesia should be stopped at once, and the patient's head promptly turned to one side. Anesthesia should never be crowded at this point. When induction is complete great care should be exercised to see that the anesthetic level is not lowered until the operative procedure is at an end. Recovery, and a second anesthesia for the repair of episiotomy is another danger.

Recovery from ether anesthesia is slow, and the excitement of emergency may be high in those women in whom it has been difficult to induce anesthesia. The hyperpnea induced by carbon dioxide will hasten recovery and increase the safety of this stage of anesthesia. The recovery bed should be elevated at its foot, and the patient placed in it on her side. She should be closely watched, and deep breathing or coughing may be encouraged until she is mentally alert. Bronchoscopy may be indicated.

Local anesthesia is much safer than general. Episiotomy and low forceps delivery can be easily and satisfactorily accomplished under local infiltration. And pudendal block, in the hands of the expert, is satisfactory for delivery from midpelvis.

1. C. A. Gordon, Brooklyn, in *Jl. Mt. Sinai Hosp.*, Sept.-Oct.

If nitrous oxide is mixed with 20 volumes per cent of oxygen, its margin of safety is great. Prior use of sedatives during labor will increase the depth of anesthesia. Combined with local anesthesia, nitrous oxide is highly satisfactory; but it may be impossible to so anesthetize highly nervous women without anoxemia. In that event the gas-oxygen-ether sequence is satisfactory and safe if administered by an alert trained anesthetist.

Spinal anesthesia has definite advantages for abdominal delivery, but its safety is not comparable with local anesthesia.

The speed of induction and recovery may appear to make cyclopropane an asset to the obstetrician, but its potency, the danger of ventricular fibrillation and the hazard of explosion should prohibit its use. Though it is possible to administer a high percentage of O with cyclopropane, Beecher has pointed out that a much higher percentage of O is possible under full surgical anesthesia under ether. He states, too, that "a considerable change of attitude of surgeons toward cyclopropane has become apparent. The early enthusiastic approval of many has in some cases given way to questionings and doubt."

### COMPARISON OF NEW ANTIHISTAMINE DRUGS IN HAYFEVER AND OTHER ALLERGIC CONDITIONS

(T. B. Bernstein et al., Chicago, in *Ill. Md. J.*, Aug.)

A study was made of the comparative effectiveness of benadryl, pyribenzamine, and neoantergan in 567 allergic patients. The conditions represented were seasonal hayfever, due to pollens or molds, chronic perennial rhinitis, asthma, urticaria and atopic dermatitis.

Pyribenzamine most consistently improved the symptoms of seasonal hayfever and chronic allergic rhinitis. All of these drugs gave poor results in asthma. Pyribenzamine was more effective than benadryl.

Pyribenzamine and benadryl were equally effective—80%—in relieving the pruritus of urticaria and atopic dermatitis, and vulvar and anal pruritus.

Toxic effects—most marked side effect sleepiness—occurred commonly with all three. Incidence: benadryl 50%; neoantergan 27%, and pyribenzamine 23%.

It is emphasized that the antihistaminic drugs are palliative remedies only and are in no sense a cure. On discontinuance of the drug symptoms recur in a few hours. They cannot be considered as substitutes for allergic management, but are valuable adjuncts to such treatment.

### ON FINDING THE TUBERCULIN TEST POSITIVE

(R. V. Platou, *Am. Rev. of Tbc.*, April)

When a physician encounters an infant or child with a positive tuberculin test, he has six clear-cut responsibilities: he must classify or describe the lesion, judge activity, determine communicability, seek the source of infection, make recommendations for therapy based on specific objective data and, last, follow each patient carefully at frequent intervals at least until all evidences of activity have subsided or until resolution of the initial lesion is complete.

ABSENCE OF FIBULA.—Of 6,068 children seen at the Scottish Rite Hospital for Crippled Children, Dallas, Texas, over a period of 19 years, there have been 12 cases of congenital absence of the fibula.—*Trees*.

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### Rhino-Oto-Laryngology

CLAY W. EVATT, M.D. .... Charleston, S. C.

### Proctology

RUSSELL L. BUXTON, M.D. .... Newport News, Va.

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### Pediatrics

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### Dermatology

J. LAMAR CALLAWAY, M.D. .... Durham, N. C.

### Allergy

KATHARINE MACINNIS, M.D. .... Columbia, S. C.

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*As is true of most Medical Journals, all costs of cuts, must be borne by the author.*

## FOR THE 1948 TRI-STATE MEETING

.. CHARLESTON—FEBRUARY 9TH-10TH ..

THE PROGRAM for the coming meeting of the Tri-State Medical Association is being built on the plan of clinics and formal essays, which always proves so popular.

We are assured of excellent clinics given by those skilled in teaching and with all the facilities at hand for best presentation. Whatever time may be requested by clinicians will be assigned first.

Places on the program have been taken by members from all three States. There is room for more without crowding. Write the secretary promptly what subject you wish to present.

We are fortunate in being able to arrange with the Hotel Fort Sumter for accommodations. This comes about only because the meeting will be held between seasons as to tourist demands. You will note that our time of meeting is earlier than usual, which time was chosen in order to come between the heaviest winter tourist season and the period of great demand by those returning from further South.

Every time is a good time to visit Charleston. You and your lady will surely be in attendance for the profit and pleasure to be derived from an excellent medical meeting in a city with a charm all its own.

Make your reservations early.

## LUNG CANCER MORE COMMON THAN ANY OTHER CANCER EXCEPT THAT OF THE STOMACH!

OVER the past 25 years doctors generally have come to recognize that cancer of the lung occurs far more frequently than had hitherto been realized; but it will be a revelation to most to learn that lung cancer is second only in frequency to stomach cancer.

Ochsner and his associates at Tulane tell us that this is the case, and warn all doctors to be on the alert for its early detection. They tell us that the disease begins with little warning, that the commonest symptoms are cough, loss of weight, discomfort or pain in the chest; and that in many instances a history is given of previous respiratory infection, spitting of blood and labored breathing. Nothing of this is characteristic of lung cancer, so routine examination by the x-rays is essential for early diagnosis. In one-third of the cases it was necessary to make a surgical incision in the chest wall to establish the diagnosis.

Removal of the lung while the cancer is still confined to the lung is the only possible cure. These doctors report that in only three-fifths of the cases could an operation be recommended and that in only three-fifths of the operations started

was it considered advisable to remove the lung.

All must agree with the conclusion that, only when physicians generally become cognizant of the frequency of primary lung cancer, and that only in those cases recognized early can much hope be held out, will the possibilities of cure by surgical removal be realized.

1. Alton Oschner, Michael DeBakey & J. L. Dixon, in *Jl. A. M. A.*, Oct. 11th.

## MORTALITY FROM ACUTE APPENDICITIS REDUCED NEARLY FOUR-FIFTHS IN TEN YEARS

THE COMMISSION ON ACUTE APPENDICITIS MORTALITY of the Medical Society of the State of Pennsylvania has inaugurated with the third state report<sup>1</sup> a series of annual surveys planned to further reduce the mortality of acute appendicitis in Pennsylvania to the unavoidable catastrophes. The mortality discovered in the three surveys—1937, 3.39 per cent; 1942, 1.1 per cent; 1946, .69 per cent—shows results as astonishing as they are gratifying.

The data from the three state surveys, used with sufficient intelligence and determination by the counties of the State, will, in the opinion of the Commission, reduce acute appendicitis deaths to those due to an unavoidable catastrophe. They say there need be no appendicitis problems in the future in Pennsylvania, which is to say there need be no appendicitis problem anywhere.

In the two previous surveys no attempt was made to cover every hospital in the State, but a large group of approved general hospitals was selected where most of the cases could be expected to enter. The total number each year compared well with the vital statistics report for the State in percentage reduction.

This year each county makes its own report from every hospital.

The commission would like to make a more accurate evaluation of the problem by having an analysis made of all peritonitis cases, spreading and localizing.

In 1946, there were 187 deaths, of which 75 were catastrophes—31 considered unavoidable, 44 avoidable. Of the 44, there was failure to drain peritoneal cavity after installation of sulfonamides in 15, failure to drain peritoneal cavity in appendicitic peritonitis in 13, anesthesia was blamed for 13, hemorrhage for two and rupture of appendix on removal for one.

The commission offers no hard and fast rule to be followed in the selection of an anesthetic, but says pointedly that usually the rapidity of induction is an indication of its lethal potency, and that shock is usually more profound following the ad-

ministration of spinal anesthesia than any other.

Of the 112 deaths not due to catastrophes, ten of the patients were not operated upon, and 102 died of spreading peritonitis. A study of the clinical records convinces the commission that errors in management and technic are in a great part responsible for the deaths, the number of which has not been materially lessened in the past ten years; these errors in order of their seriousness: the routine removal of a perforated appendix; failure to evaluate the sulfonamides, penicillin and streptomycin; failure to drain and the improper selection of type and poor placement of drains when used; and using a certain type of incision routinely.

"The 1942 report showed that the sulfonamides should not be installed in the peritoneal cavity under any circumstances. Yet surgeons again last year installed the sulfonamides in 64 patients who died, 15 of whom were not drained."

The commission has positive opinions about the usefulness of biotics, and of suiting the incision to the case:

Penicillin was given to 108 patients suffering with spreading peritonitis who died, but the average dose was only 32,500 units, by no means an adequate dose. Of the 187 patients who died only eight received streptomycin. Thus antibiotic combined with penicillin should be given routinely to patients operated upon for spreading peritonitis.

The transverse or oblique incision in the presence of spreading peritonitis limits manipulation so that a minimum of trauma occurs, with a corresponding limited absorption of bacterial toxins.

Results already achieved justify this Pennsylvania group in their further recommendations and their expectation of further improvement.

This is no happen-so. The greater part of this life-saving is certainly the direct result of the labors of this commission of a State Medical Society, backed up by the Society as a whole.

It is plainly incumbent on doctors everywhere to learn how this wonderful thing has been done in Pennsylvania, and to do the same for the people of their own States.

## THE UNSTABLE COLON

A JERSEYITE<sup>1</sup> writes with feeling and vast understanding of that common and persistent condition that patients seem to enjoy laying claim to—"colitis."

The colon, says Kaplan, is a vegetative organ, and a disturbance in any vegetative organ may be but a sounding board for emotional or psychic disturbances. The symptom-complex of paroxysmal attacks of poorly located abdominal pain, no fever or systemic signs, no relationship between food

1. J. O. Borner & C. F. Freed, Philadelphia, in *Penn. M. J.*, Oct.

1. S. B. Kaplan, Newark, in *Jour. Med. Society, New Jersey*, Nov., 1947.

intake and the pains, accompanied by diarrhea or constipation comprises a definite entity familiar to all who practice gastro-enterology. The high incidence of functional colonopathies is little realized by the general practitioner.

Among the recognized causes of functional disturbances of the colon are endocrinopathies, neurogenic factors, dietary deficiencies, vagotonia, bacterial allergies and food allergies. Any one or a combination of these may be present in a particular patient. The immediate cause of colonic dysfunction is a derangement of the autonomic nervous system. The colonic neurosis the author believes to represent, perhaps, the truest example of a civilization disorder. Personality studies reveal a generally poor psychiatric heredity, most patients being of low energy, emotionally apprehensive, passive and egocentric. Attacks occur most often after an emotional upset.

Discomfort or crampy pain in the lower abdomen is the leading complaint. Attacks may last from minutes to days. The discomfort is described as a dullness or heaviness in the lower abdomen. Gas, belching and bloating follow. The attacks seldom interfere with sleep and, at times, relief is attained by expulsion of flatus, bowel movement or by enema. Upper abdominal symptoms may accompany lower abdominal distress. Usually there is either a slightly constipated stool followed by a mushy movement, or small hard pellets. The stool may be long and narrow.

Examination of the blood and stools, proctoscopic and sigmoidoscopic examination, and the fluoroscopic and roentgenologic study of the colon and terminal ileum represent the minimal amount of study necessary. In the x-ray studies, the use of barium enema is not to be neglected. Hospitalization is not good practice. Most of these patients Kaplan has found to get worse at the mere mention of a hospital, even though the change in environment and habits may be a start toward readjustment. Diet in the beginning should be non-residue to give the colon a rest. Drugs are of value only for nervous tension or active diarrhea.

Results, it is concluded, depend largely on the doctor's ability to arrive at complete understanding with the patient. Fears must be dispelled. The condition may return at any time. It is a nuisance and handicap, with which one can live and carry on within reasonable limits. Failures and discouragements are many, but enough of these patients are salvaged to bring to the physician some satisfaction for his efforts.

#### PENICILLIN OR STREPTOMYCIN

GENERALLY SPEAKING, if the pathogen is a gram-positive coccus penicillin is the agent of choice; if it is a gram-negative bacillus, streptomycin is indi-

cated. In some mixed infections, both penicillin and streptomycin are required. Fungus infections and numerous virus diseases responded neither to penicillin nor to streptomycin. We may hope that these latter may be found to be sensitive to antibiotics yet to be proven.

With this introduction, *The Bristol Digest* (Sept.) presents the status of penicillin and streptomycin, as derived from the work of many investigators.

##### A synopsis:

Direct instillation of penicillin into infected cavities may be required, or topical application to exposed surfaces, alone in some cases, or in supplement to parenteral therapy in others. Streptomycin should be effective locally as well.

Penicillin is cleared from the blood stream more rapidly than streptomycin; roughly, every four to six hours for streptomycin as compared with every two or three hours for penicillin. However, the injection of 300,000 units of penicillin in an oil-and-wax base only once or twice daily maintains adequate blood levels of penicillin for most purposes. In five times the dosage employed parenterally, penicillin is effective by mouth. Against the markedly penicillin sensitive organisms, such as the beta hemolytic streptococcus or gonococcus, oral therapy with penicillin is efficient.

In the treatment of infections caused by the hemolytic streptococcus, gonococcus and pneumococcus, a favorable outcome can usually be anticipated with penicillin therapy, assuming therapy is instituted early, is quantitatively adequate, and appropriate supporting measures are employed. The various strains within each of these species are sensitive to penicillin, not equally perhaps, but nearly so. This is not true of the strains of the various species of organisms to which streptomycin is hostile. In consequence, results to be obtained with this agent in the treatment of infections caused by these species are not so predictable. With penicillin, a naturally resistant strain of an otherwise sensitive species is possible, but it is not ordinarily a factor to be reckoned with. With streptomycin, whatever the infecting species may be, it can never be assumed with safety that a naturally resistant strain is not responsible for the infection.

A second cause for unpredictable results in streptomycin therapy is the rapidity with which some organisms *acquire* resistance. This characteristic of streptomycin is in sharp contrast to penicillin, where the development of resistance in therapy is of minor practical concern. With streptomycin it has been stated that the *in vitro* sensitivity of the tubercle bacillus may decline a thousandfold on prolonged administration, yet in one case sensitivity to less than five micrograms per c.c. persisted for eight months.

The average daily intramuscular dosage of penicillin in most diseases, with the exception of subacute bacterial endocarditis, is 300,000 units. This dosage can be increased to 10 or even 20 times as much, if necessary in selected cases. The average daily dosage of streptomycin is 2.0 gms., which can be doubled or perhaps tripled for short periods at most without producing toxic reactions.

Occasionally sensitivity reactions are encountered with penicillin, particularly when it is used topically, apparently from sensitivity to the penicillin itself, an impurity in it, or from an ingredient of the vehicle. Such local reactions are usually mild and transient, and in most instances therapy can be resumed after a brief interval.

Undesirable reactions to streptomycin are reported with relative frequency. The most important is impairment of vestibular function and, less often, of the auditory function of the eighth cranial nerve. The most common manifestation is a disturbed sense of equilibrium, in the third week of treatment with doses of two or three grams daily. It is of variable duration, usually disappearing in due course even though treatment is not interrupted. However, objective tests reveal persistence of vestibular dysfunction for several months, perhaps permanently. Impairment of hearing is not encountered frequently except following intrathecal injection, or with daily dosage in excess of three gms., or with normal dosage in the presence of kidney dysfunction. The nature and mechanism of these reactions are not fully known.

Other toxic reactions: the so-called histamine reaction—flushing, headache, and a drop in arterial pressure; various anaphylactic manifestations, and renal irritation with cylindruria and sometimes impairment of renal function. Some of these may be due to impurities, some result from sensitization to the drug itself. All can be controlled by discontinuing the drug, and some disappear spontaneously where urgency requires continuation in spite of untoward reactions. Severe sensitization reactions always demand at least temporary discontinuance of the drug. Small test doses after several weeks intermission will often show that treatment in full dosage can be resumed.

With either penicillin or streptomycin, it is necessary to use adequate dosage and appropriate supportive measures as necessary, including incision and drainage when suppuration is excessive. Biotics respectively and selectively attack specific organisms, so accurate bacteriological diagnosis is essential in making the choice between penicillin and streptomycin as a therapeutic agent.

Both penicillin and streptomycin have performed wonders in some cases: but each has its limitations, its disadvantages, and advantages. Between

them they provide protection against a great proportion of the common diseases to which man is subject.

#### DOCTOR JAMES S. PLANT

Dr. James Stuart Plant died suddenly in his home in East Orange, New Jersey, on September 7th, at the age of 57. Dr. Plant was born in Minneapolis, he was an academic graduate of Hamilton College and of the University of Pennsylvania in medicine in 1913.

He became soundly educated and well trained in psychiatry. Most of his professional life was devoted to the study and care of juvenile mental abnormality. For more than twenty years he was Director of the Essex County Juvenile Clinic at Newark. He gave of himself freely in that capacity, also as a teacher, and he made frequent contributions to psychiatric literature. He was the author of "Personality and the Cultural Pattern." Dr. Plant was active in the American Psychiatric Association. He was Chairman of the Executive Committee of the National Association for Mental Hygiene. His professional knowledge and his sound judgment were in constant demand and he will be greatly missed.

—J. K. Hall

#### FOR EARLIER INOCULATION AGAINST WHOOPIING COUGH

(J. M. Adams et al., Minneapolis, in *Am. J. Dis. of Children*)

Babies should be inoculated against whooping cough during the first six months of life.

Although 67 per cent of all deaths from whooping cough occur during the first year of life, many doctors believe that infants should not be inoculated until after the seventh month. This is because the ability of a newborn infant to form antibodies, the substances manufactured by the body cells to protect themselves against the serum, is supposed to be low.

These doctors concluded for earlier inoculation after observing the response in a group of babies who were given three weekly whooping cough inoculations within the first month of life.

The fact that the infant at seven months of age is able to respond to immunization better than the newly-born infant is weak evidence for withholding the immunization past the age of greatest risk. In private practice withholding immunization until seven months may be warranted only if the infant can be protected from exposure by a controlled environment. However, in public health preventive programs an earlier period would seem desirable. Furthermore . . . nonimmunized persons in a group derive protection from existing in a well immunized population. Thus the few infants who fail to respond to the vaccine are indirectly protected.

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# NEWS

## Program FALL MEETING

### THE NEUROPSYCHIATRIC SOCIETY OF VIRGINIA

October 22nd, Westbrook Sanatorium, Richmond

Methods of Interviewing Patients. Dr. James H. Wall, Medical Director, The New York Hospital, Westchester Division, White Plains, N. Y.

The Use of Curare in Muscular Spastic States. Dr. Walter O. Kingman, Department of Neurology and Psychiatry, University of Virginia Hospital, Charlottesville, Va.

Treatment of Dementia Praecox by Electro-Shock Therapy. Dr. Addison M. Duval, St. Elizabeth's Hospital, Washington, D. C.

Hallucinatory and Delusional Symptoms of Affectivity Disturbances. Dr. Leslie B. Hohman, Professor of Neuropsychiatry, Duke University, Durham, N. C.

Recess: Refreshments at Dr. Anderson's home.

Dinner: Westbrook Sanatorium at 6:30 p. m. Speaker, Mr. William Shands Meaham, Director of Virginia Council on Health and Welfare, "The Offender and Psychiatry."

A meeting of the Mid-Eastern Region, American Association on Mental Deficiency, was held at Hotel John Marshall, Richmond, October 31st.

KENTUCKY DIVISION, AMERICAN CANCER SOCIETY, with the aid of the GENERAL ELECTRIC X-RAY CORPORATION, has made it possible for people in outlying areas to receive first-class medical examination for cancer without the cost and difficulty of traveling great distances, by providing the first mobile cancer-detection bus ever to be equipped with x-ray apparatus.

Modeled after buses now used for x-ray surveys of apparently-healthy persons in tuberculosis campaigns, the "Cancer Mobile" will carry x-ray into the by-ways of Kentucky, acting as an extension arm of the state's network of 16 cancer clinics.

### UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE

On Friday, October, 3rd, Mr. Manfred W. Comfort, of the Mayo Clinic, spoke to the faculty and student body on the subject of "Pancreatitis."

On Friday, November 14th, Mr. Paul B. Magnuson, Professor of Surgery, School of Medicine, Northwestern University, gave the first annual lecture under the Charles Venable Lectureship on Traumatic Surgery. Dr. Magnuson spoke on the subject of "Backache and Disc Symptoms: So Confusing."

On Monday, November 17th, Dr. Philip S. Hench, of the Mayo Clinic, gave the annual Alpha Omega Alpha address. Dr. Hench spoke on "Walter Reed and the Conquest of Yellow Fever."

On November 6th, Dr. H. B. Mulholland, Professor of Practice of Medicine, spoke at the Post-Graduate Seminar of the Medical College of the State of South Carolina, Charleston, S. C., on the subject of "Recent Advances in the Treatment of Diabetes Mellitus."

The Ciba Pharmaceutical Company has given a grant of \$2,500 for investigation in the field of Bacterial Artery. This investigation will be conducted in the Department of Internal Medicine under the supervision of Dr. Oscar Swineford, Professor of Practice of Medicine.

### PENDERGRASS LECTURES ON ATOMIC FISSION

At Charlotte Memorial Hospital the evening of October 18th, Dr. E. P. Pendergrass, professor of radiology at the

University of Pennsylvania, spoke on the utilization in medicine of the knowledge gained from breaking the atomic nucleus. The large assemblage of physicians, physicists, chemists, and others interested, paid rapt attention as this great authority told us far more than we could take in about this, perhaps the most portentous scientific accomplishment of all time.

### STOCKHOLDERS OF SOUTH BOSTON, VA., HOSPITAL OFFER TO SELL TO SELL TO TOWN AND COUNTY

Stockholders of the South Boston Hospital have voted to offer the real estate and equipment of the hospital to the town of South Boston and Halifax County at a price to be determined by appraisers representing all parties concerned.

The attorneys said that the stockholders were aware that certain groups were actively involved in efforts to obtain a publicly owned community hospital for the county on the ground that present facilities are inadequate.

### CHARLOTTE MEMORIAL HOSPITAL

The regular monthly meeting of the Visiting Medical Staff of Charlotte Memorial Hospital was held in the Clinical Pathological Conference Room of the Hospital at 8 p. m. on Tuesday, September 23rd, 1947.

#### Program

#### 1. Intracranial Aneurysms

a. Arterial Aneurysms—Dr. Rowland T. Bellows.

b. Arteriovenous Aneurysms—Dr. William R. Pitts.

#### 2. Summary of Statistics from Department of Urology for year August 15th, 1946, to August 15th, 1947 (with lantern slides)—Dr. Preston Nowlin and Dr. Kenneth Lynch.

THE SEVENTH DISTRICT MEDICAL SOCIETY held its annual meeting at Charlotte Nov. 5th, afternoon and evening.

#### Afternoon:

Meeting Called to Order by Dr. Elias Faison, Councilor, Charlotte.

"Diagnostic X-Ray Criteria for Common Diseases of the Large Bowel." Dr. James E. Hemphill, Charlotte.

"Primary Parenchymal Liver Diseases." Dr. Hugh H. Mills, Forest City.

"Coarctation of the Aorta." Dr. Tom W. Baker, Charlotte.

"Technique of Breast Feeding." Dr. Frank Howard Richardson, Black Mountain and Asheville.

"Autopsy Experiences in a Small General Hospital." Dr. Eugene E. Yow, Concord.

#### Social Hour.

#### Evening:

Barquet, Hotel Charlotte, 7 o'clock.

Invocation, Dr. R. H. Lafferty.

Address of Welcome, Mr. Richard E. Thigpen, Charlotte.

Response, Dr. Craig S. Jones, Shelby.

Address, Dr. Frank A. Sharpe, Greensboro, President Medical Society of the State of North Carolina.

Luncheon—Gus Travis, Charlotte.

Dr. C. Y. Sorrell, Wadesboro, was succeeded in the presidency by Dr. J. A. Elliott, Charlotte. Dr. H. C. Thompson was reelected secretary. Rutherfordton was chosen the next meeting place.

### SOUTHEASTERN ALLERGY ASSOCIATION

The Third Annual Meeting of the Southeastern Allergy Association will be held in Richmond on January 17th and 18th at the Jefferson Hotel, it is announced by Dr. Katharine Baylis MacInnis, Columbia, Secretary.

#### PORTRAIT OF DR. McCaw TOMPKINS UNVEILED

On October 7th a portrait of Dr. James McCaw Tompkins, a member of the Johnston-Willis Hospital group for 40 years, and president for a decade, was unveiled at the hospital with appropriate exercises in the presence of a distinguished group of friends and relatives. Among the latter was a brother, General Wm. F. Tompkins.

Dr. Tompkins was a grandson of Dr. James B. McCaw and a son of Dr. Christopher Tompkins, both of whom had been Dean of the Medical College of Virginia.

#### FOUR DANVILLE DOCTORS BUY HOSPITAL

A group of local doctors have purchased Danville (Va.) Community Hospital and the adjoining nurses' home. The new owners are Drs. L. O. Crumpler, Clyde Bailey, Walter McCann and H. A. Wiseman. Dr. Crumpler is president and the hospital will continue operation with the same technical staff as heretofore, pending receipt of a certificate of incorporation from the State Corporation Commission. It was said other physicians likely would be added to the list of purchasers.

Dr. Crumpler said that decision to buy the hospital and continue its operation was made primarily because Danville could not afford to lose the 40 beds at present. The new owners, he said, plan to remodel the structure and add new equipment.

DR. WILLIAM R. BRANDON has opened an office for the practice of diseases of the ear, nose and throat, and has joined the staff of the H. F. Long Hospital, Statesville.

Dr. Brandon retired from his New York practice the past summer after practicing in New York City for twenty-odd years, where he was surgeon at the Manhattan Eye, Ear and Throat Hospital and for a number of years in charge of the Ear, Nose and Throat Department of Gouvencur City Hospital and on the staff of a number of other hospitals.

#### MARRIED

Dr. Thomas Claiborne Guthrie, III, of Newark, New Jersey, and Miss Virginia Lee McRae, of Rockingham, North Carolina, were married on November 8th.

Dr. Joseph Frasier Jones, Jr., and Miss Henrietta Short Tabb, both of Richmond, were married on November 8th.

#### Schering Wins Advertising Honors

The direct mail advertising of the Schering Corporation of Bloomfield and Union, N. J., has recently been awarded the "Best of Industry" prize by the Direct Mail Advertising Association, which has in the past six years consistently honored Schering as one of the "50 Direct Mail Leaders" of the country. Announced at the group's annual convention at Cleveland, the selection of Schering's promotional campaign for the past year is in recognition of the effective force of the company's direct mail program of information for the medical profession. Artistic excellence, quality production and high calibre of copy have marked the Schering service as outstanding for almost a decade.

#### Syrup Sedulon for Stubborn Cough

A new, non-narcotic cough syrup recommended for severe cough—particularly for night cough—was recently announced by Hoffmann-La Roche, Inc., of Nutley, N. J. Syrup Sedulon contains a new drug developed in the Roche Research Laboratories—Sedulon—which has a mild sedative action. It is so effective that it can often be used in place of codeine, thus avoiding the use of a narcotic. Its pleasant flavor makes it willingly taken. Like all

Roche products, Syrup Sedulon will be promoted to the medical profession only. Samples and descriptive literature will be supplied upon request.

#### 1947 Edition of Parergon

Parergon (work by the side of work) is Mead Johnson & Company's picture book of artistic works by physicians.

The current edition is a book of 208 pages and shows 1100 examples of creative art by contemporary physicians.

This book is available without charge only to physicians upon request of Mead Johnson & Company, Evansville 21, Ind., U. S. A.

#### New Potent Estrogenic Elixir

Roche-Organon, Inc., has just introduced to the medical profession a new estrogenic elixir, Lynoral Elixir, which offers in each teaspoonful 0.03 mg. of ethinyl estradiol—the most potent oral estrogen.

Lynoral Elixir has the taste and aroma of a fine peach cordial. It may be prescribed in combination with sedatives, analgesics, and other therapeutic agents.

#### Schering Research Group Studies Egyptian Cholera Epidemic

Dr. Harry Seneca, Research Associate of Columbia University, College of Physicians and Surgeons and Consultant to Schering Corporation, Bloomfield and Union, N. J., recently flew to Cairo by special plane to study methods employed and to assist in the control and treatment of epidemic cholera now prevalent in the Nile Valley. Dr. Seneca is cooperating in this study with the Division of Clinical Research of Schering Corporation, of which Dr. Edward Henderson is Director.

Dr. Seneca was formerly associated with the American University Medical School in Beirut, Lebanese Republic, and later was assistant professor of tropical medicine at Tulane University School of Medicine, New Orleans. He served during the war with the U. S. Army Medical Department.

#### TREATMENT OF INFANTILE ATROPHY WITH DESOXYCORTICOSTERON

(Per Forssell, Helsinki, in *Ann. Med. Inter. Fenniae*, Vol. 36, 1947)

In these four cases the atrophic state followed upon infections of different natures, whereas it seemed that alimentary reasons had not played any etiologic part.

The analyses of the blood showed surprisingly low protein values in all the cases, which was explained as a sign of the disturbed protein synthesis due to atrophy. The tendency to edema must at least partly be considered as due to the small protein content of the blood. It took quite a long time before normal protein values were achieved, even after the improvement of the general state, a beginning increase in the weight and the administration of a normal diet.

The author describes four cases of serious infantile atrophy and shows that this pathological state can be successfully treated with desoxycorticosteron. Even if the number of cases does not justify any certain conclusions, the positive impression remains, that it would be well to try administrations of the cortical hormone, which may be causally indicated in cases of atrophy. This does not mean that every such case is primarily dependent on an insufficiency of the suprarenal glands. Yet the desoxycorticosteron seems to reestablish the fluid-binding functions and to increase the tolerance to food, in a way that makes it possible, by means of an adequate supply of breast milk and caloric-rich mixtures, to bring about a normal increase in the infant's growth.

## BOOKS

ILLUSTRATIONS OF REGIONAL ANATOMY, by E. B. JAMILSON, M.D., Senior Demonstrator and Lecturer Emeritus, Anatomy Department, University, Edinburgh. Seventh edition. *The Williams and Wilkins Company*, Mt. Royal & Guilford Aves., Baltimore, 1947. \$20.

The present (the seventh) edition is the first that has come to this reviewer's desk. It is learned now that the illustrations in the first five sections made their first formal appearance in 1934, but that as they were based on diagrams gradually planned to illustrate the author's lectures on regional anatomy, they were in fact much older.

The present edition has seven sections—

I Central Nervous System	51 plates
II Head and Neck	64 "
III Abdomen	44 " *
IV Pelvis	35 "
V Thorax	32 "
VI Upper Limb	42 "
VII Lower Limb	52 "

All of these plates are exquisitely done, most of them in colors. They represent assiduous and prolonged labor of an anatomist who is at the same time an artist. It is to the great advantage of students, under- and post-graduate, elsewhere than at the University of Edinburgh, that successive editions have come to be used very widely. Certainly the work is well deserving of great popularity as a means of teaching anatomy.

THE PRINCIPLES AND PRACTICE OF MEDICINE. Originally Written by WILLIAM OSLER, M.D., F.R.C.P., Designed for the Use of Practitioners and Students of Medicine, by HENRY A. CHRISTIAN, A.M., M.D., LL.D. (Hon.), Sc.D., Hon. F.R.C.P. (Can.), F.A.C.P., Hersey Professor of The Theory and Practice of Physic, Emeritus, Harvard University, etc., 16th edition. *D. Appleton-Century Company, Inc.*, 35 West 32nd St., New York City, 1947. \$10.

The book opens with a discussion of the History of Medicine (1892-1947), as told in 16th editions of Osler's Principles and Practice of Medicine, by James G. Carr, M.D., Chicago. Perhaps from no other source could there have been gained material for so vivid an outline of progress in the medicine of this period.

The body of the book covers the essential points as to all medical disease conditions likely to be encountered in this part of the world, and a great many very rarely seen here. This coverage has been brought right up to date. The book has more than 1500 pages, every one of which deals with essentials. It would be hard to find any fault in it. It is the best volume on the practice of medicine extant.

PENICILLIN THERAPY INCLUDING STREPTOMYCIN, TYROTHRIN AND OTHER ANTIBIOTIC THERAPY, by JOHN A. KOLMER, M.S., M.D., Dr. P.H., LL.D., LL.D., F.A.C.P., Professor of Medicine in the School of Medicine and the School of Dentistry, Temple University. Second edition. *D. Appleton-Century Company, Inc.*, 35 West 32nd St., New York City, 1947. \$6.00.

This edition represents much revision of the first, as was made necessary by the tremendous extension of the therapeutic use of penicillin, and by the accumulation of perhaps most of the knowledge we have of the usefulness of streptomycin, tyrothricin and the other antibiotics with which the book is concerned, since the appearance of the first edition.

Certainly no one is better qualified than Kolmer to judge of the truly astounding claims made for these agents. It is gratifying to find this conservative authority enthusiastically recommending the use of these agents for the cure of such a large number of grave illnesses.

ADVANCES IN INTERNAL MEDICINE: Editors, WILLIAM DOCK, M.D., Long Island College of Medicine, Brooklyn; I. SNAPPER, M.D., The Mount Sinai Hospital, New York. *Interscience Publishers, Inc.*, 215 Fourth Ave., New York 3, 1947. \$9.50.

Some of the articles in this volume deal with investigations of problems especially urgent in time of war, most of them with problems met with commonly in civilian life. Among those of great clinical interest are the discussions of ventricular complex in the electrocardiogram, the surgical treatment of hypertension, the surgical treatment of tumors of the lung, penicillin treatment, pernicious anemia and other megaloblastic anemias, nutritional requirements in disease, and the problems of rhesus antigen. There are articles of special interest to the research worker which concern themselves with measures of investigation which have not yet come into general use.

HISTORY OF MEDICINE: A Correlative Text, Arranged According to Subjects, with 16 illustrations, by CECILIA C. METTLER, A.B., Ed.B., A.M., Ph.D., Late Assistant Professor of Medical History, University of Georgia School of Medicine, and late Associate in Neurology, College of Physicians and Surgeons, Columbia University. Edited by FRED A. METTLER, A.M., M.D., Ph.D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia. *The Blakiston Company*, 1012 Walnut Street, Philadelphia 5, Penn. 1947. \$8.50.

The author conceives that different persons interested in the contents of this book will approach the subject with different purposes in mind; that the object of one will be to obtain early references to a research topic under investigation, while another will wish only to entertain himself, a third will have a serious desire to obtain a background of scholarship, and a fourth will have in mind only the accumulation of a large number of little known facts.



The author has a purpose to bring out something of the nature of the technic by which advances (and sometimes retrogressions) have been effected.

The arrangement is to take up the various subjects, as anatomy and physiology, and follow through with these subjects from the earliest to the latest time. Then are taken up in turn, and considered after the same fashion, pharmacology, pathology and bacteriology, medicine, surgery, pediatrics and so on. This is a convenient and an attractive arrangement. The book represents infinite research and painstaking care exercised over many years and is a monumental achievement in its field.

THE 1947 YEAR BOOK OF PEDIATRICS, edited by ISAAC A. ABT, D.Sc., M.D., Emeritus Professor of Pediatrics, Northwestern University Medical School, and ARTHUR F. ABT, M.D., *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago. \$3.75.

A special feature for this year is the dedication to Dr. Isaac A. Abt, editor for the past forty-six years, on the occasion of his eightieth birthday.

The feature of carrying on the cover questions as to diagnosis and management of important disease conditions is continued. Valuable contributions to the pediatric literature in the past twelve months are abstracted with the editor's usual care and in many cases commented upon with his usual penetration.

SYNOPSIS OF NEUROPSYCHIATRY, by LOWELL S. SNELLING, M.D., Ph.D., Dr.P.H., F.A.C.P.; Director, Division of Mental Health, Florida Department of Health; formerly Attending Neuropsychiatrist, Deaconess Hospital, Detroit; Lecturer in Psychology, Wayne University; Visiting Professor of Psychology, Iowa State College. Illustrated. Second edition. *The C. V. Mosby Company*, St. Louis, 1947. \$6.50.

The author realized the need for a standardized guide and simple manual of neuropsychiatry and put out the first edition three years ago. The popularity of this edition, as much as the advances in this field in that short period, accounts for the putting forth of the second edition. The book does not purport to be a complete coverage of the subject, but it provides the essentials of neuropsychiatry in such a way as to be of great service to the student and the doctor in general practice, particularly in putting them on the right track. It is a reliable guide to diagnosis and treatment of the great majority of the neuropsychiatric conditions encountered from day to day.

#### PENICILLIN IN THE TREATMENT OF INFECTED HANDS

(Frank D'Abreu et al., in *Brit. Med. J.*, Oct. 18th)

A review is presented of 185 cases of infected hands seen in the surgery of Westminster Hospital—168 treated without, and 17 with, penicillin. On the basis of the results it is suggested that the administration of penicillin in all severe infections of the hand, both in the early stages and after any necessary surgical intervention, should be adopted as a routine method of treatment. In practice a dosage of 125,000 units of penicillin in oil or 300,000 units in aqueous solution twice daily has been found adequate.

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JAMES M. NORTHINGTON, M.D., Editor

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## DIABETES MELLITUS CLINIC\*

### CARDIOVASCULAR COMPLICATIONS

S. F. LEBAUER, M.D., Greensboro, North Carolina

**I** HOPE I have something here that will be worthy of your attention and interest. It is a case that illustrates a number of phases of diabetic complications in the field primarily of cardiovascular-renal disease.

Mr. Tilley, who is a boiler engineer, aged 45, was kind enough to present himself for this clinic. He has been treated for diabetes during the past 15 years. I say he has received treatment advisedly, because he has more or less been on his own, occasionally seeking advice when for one reason or another he has difficulty. The dose of insulin prescribed has varied from 20 to 30 units daily over a 10-year period and during the last few years he has begun to manifest some of the vascular phenomena; complications that are rather peculiar, I should say, to this disease. As a matter of fact, two or three years ago he had a left hemiplegia. The residual of that you may be able to see, or I may be able to demonstrate, as evidenced by a facial paralysis.

Mr. Tilley was referred to me six weeks ago at which time he gave this history—he stated that about six months prior, he had noticed a blister develop on one of his toes which he pricked with a needle and it seemed to respond in a very routine way. Shortly after that another one developed. Then six or eight weeks ago one developed on the

external malleolus of the right ankle. This one apparently didn't respond in the usual manner so he consulted one of our local physicians. That lesion is improving. It is at present, however, demonstrable and I will be glad to demonstrate it at the proper time. On examination he also demonstrated or presented evidence of bilateral hypaesthesia from the knee down to the ankle. It was quite apparent that he had inadequate sensory and motor innervation in the dorsum of the foot. His reflexes, while sluggish, were apparent. His laboratory findings at this time were rather surprising, however. We found him to have a blood sugar of 138 milligrams per cent, no glycosuria. I wondered then whether we were really dealing with a diabetic or whether we were dealing with some cerebrospinal disease. I proceeded to do a spinal puncture and this was negative. I then decided on a glucose tolerance test and the figures are as follows—blood sugar at this time 80 mgm./100 c.c. the first after 50 grams glucose; 30 min after first administration of glucose 133, and 30 minutes after second administration 170. Obviously we were then dealing with certainly a mild case of diabetes that had apparently been fairly well treated over these many years, but presenting evidence then of cerebral thrombosis, and cerebral vascular disease. I have a cardiogram that demonstrates evidence of coronary disease. He has a heart that is enlarged to about the anterior axillary line. This cardiogram demonstrates a left bundle branch block and is typical of a case that obviously has coro-

\*Presented to the Tri-State Medical Association of the Carolinas and Virginia's Forty-eighth Annual Meeting, Sedgfield Inn, Greensboro, N. C., March 3d and 4th.

nary insufficiency. I am sorry I don't have a slide of this. I will have to pass the cardiogram around.

Dr. McKittrick, at a meeting in Durham a few weeks ago, mentioned this particular syndrome and referred to it as a neuropathic hypaesthesia and he had no etiological explanation for this syndrome. I certainly am not going to venture a theory at this particular time. As a matter of fact, I don't have one that is satisfactory to myself and I am sure that none would be satisfactory to you.

I believe this covers the essential points in the case. The only additional factual matter so far as the patient is concerned would be pertaining to his family history. I find that his mother had diabetes, that one sister died with diabetes, and that a brother is living and has diabetes. Mr. Tilley, I believe that is about all, or rather I'd like for the gentlemen to see that place on your ankle.

I think this case illustrates certainly a ramification of vascular phenomena. By the way, I failed to mention the fact that he is now having intermittent claudication. He has to be careful in cold weather. He tells me now that he has a heater at the foot of his bed. The dorsalis pedis is barely palpable in both extremities. I didn't palpate them this morning, but at first examination they were just barely palpable.

Now, as I said before, this case certainly gives us food for thought since it is becoming increasingly apparent that we shall now begin to see and will continue to see more and more of such cases that this man presents. Now the point, as I see it, is what can we do about it? Statistics show us that this condition is ten times more common in diabetics than in non-diabetics. It also occurs at an age a decade earlier than non-diabetics and this then poses a problem as to how we are to contend with this particular problem. A good many men have discussed this from the standpoint, first

of all, as to whether diabetes represents a disease of carbohydrate metabolism or fat metabolism or both. Apropos the fat metabolism, I wish to say his cholesterol this morning shows a reading of 460 and blood sugar 204 mgm. per 100 c.c.

LeVerne makes this statement: "A large number of diabetics especially the elderly ones with mild cases, eventually develop coronary artery disease. This relationship probably will grow more common as time goes on for insulin should prevent early death in diabetes and permit such individuals to live long enough to develop the vascular changes that are so prevalent in this disease."

Allen Barker and Kines state in a recent publication: "That the existence of diabetes is a predisposing factor to severe and premature arteriosclerosis obliterans is a generally accepted theory," that this condition occurs eleven times more frequently in the diabetic than in the non-diabetic, and that this condition occurs a decade later in the non-diabetic male and two decades later in the non-diabetic female. Dry and Hines found that in the age period of 40-49 arteriosclerosis obliterans occurred about twelve times as commonly among diabetic women as among non-diabetic, and was clinically much more severe. The exact mechanism by which the diabetes may predispose to the development of premature arteriosclerosis obliterans is not well understood. It is recognized that lipemia may occur in diabetes but this is not always true. These problems may be answered when the question of whether diabetes is a disturbance of carbohydrate metabolism, or of fat metabolism, or of both, is decided.

In summary, allow me to suggest that consideration be given to the early detection and treatment of disorders of carbohydrate and fat metabolism to the end that premature arteriosclerosis obliterans may be prevented.

## MUSCLE ATROPHY FROM SENSITIVITY TO PROTAMINE ZINC INSULIN

C. M. GILMORE, M.D., Greensboro

**MR. PRESIDENT** and Gentlemen: You know how medical cases run, particularly the unusual things—you go along twenty years and never see a certain rare condition, then you have a series of three or four before you get stopped. I have been asked to discuss this afternoon three cases of muscle atrophy presumably from prolonged use of protamine zinc insulin. I can't give you anything of the literature on the subject because, so far as I have been able to learn, nothing has been published on it. The only thing we have had on it was a lecture by some one whose name I am sorry I have forgotten, who spoke in the Watts Hospital Symposium last month. He referred to two cases.

Of our cases, the first is that of a lady, 38 years old, who had a very mild diabetes. She had been taking 15 units of protamine zinc insulin daily for two years. Last summer, soon after going to the beach, when she made her first appearance of the season in a bathing suit, she was surprised to find a "caved-in place" on the lower left thigh. The left leg was definitely smaller. There was definite atrophy of the quadriceps extensor in that area.

Then a man came in who had been on insulin two-and-a-half years. He, too, was a mild diabetic. He took small doses, 20 units once a day, with a fairly liberal diet. His first complaint was that on getting out of bed in the morning his left leg

would not support his weight. His blood sugar was normal. There was no sugar in the urine. He showed no vascular change. His urological examination was negative. In other words, the diabetes was under control, but again we found that the measurement on the left thigh was very definitely less than that on the right, and that throwing his whole weight on the left knee with the knee partly flexed would take him to the floor.

Then the third case: the patient was here earlier in the afternoon and I am sorry he had to leave. I had particularly wanted to get Dr. George Wilkinson to examine this patient and comment on the condition. The patient was going to Florida and through misunderstanding came two hours ago and he was in such a stew I let him go ahead. The man is 70 years old. His muscle atrophy dates back two years, his diabetes ten years. Ten years ago he had sciatica and lumbago. He has been found since to have some arthritis. He had a mild case of diabetes and was put on 20 units of protamine zinc insulin daily. He used his left thigh for his injections. His first complaint was inability to stand

when he first got up in the morning, particularly if he took his first step on his left leg, when he would go down. He was very thoroughly studied in the out-patient department of Duke Hospital. We sent him to Dr. Joe Stevens, in Greensboro, for neurological study. Later he had neurological examinations at two other clinics. The only positive finding was loss of knee jerk in the left leg and atrophy of the left thigh. The left thigh measures  $17\frac{1}{4}$  inches, the right in the same area  $18\frac{1}{2}$  inches. The man cannot support his weight on his left leg unless he keeps it straight. In other words, he has very definite and very severe quadriceps weakness.

I think the only thing we might gain from review of these cases is that we should start getting patients to use different portions of the body for injection of insulin. The only thing we could offer to these patients was to change back to plain insulin, and they haven't gotten any worse, but they haven't gotten any better. We would very much appreciate any discussion from any of the men when the papers are open for discussion.

## EYE COMPLICATIONS

H. C. WOLFE, M.D., Greensboro

**T**HANK the Lord eye complications are not frequent in diabetes. The main complications in a case of diabetes usually are retinitis or retinosis cataract, choroiditis, iritis, and in some cases interference with accommodation. For the cataracts which develop in diabetics the treatment of course is removal of the cataract. The thing that is most serious is the retinosis. I say retinosis because it is a better, a more descriptive term, than retinitis, it being a condition of degeneration instead of a condition of inflammation. The thing that usually calls it to our attention is the fact that you do a refraction and get good results you think, and in a few months the patient comes back complaining about his glasses. You examine and find out that he has lost vision. You examine again and find that he takes different glasses from what he did the first time, and you begin to wonder what has happened in this case. His eye grounds are negative. It does not mean that he has no pathology, but that he has none that shows up on ophthalmoscopic examination. There may be some blurring of the head or some edema of the retina. You change his glasses and in 30 days he comes back again and wants to know what is the matter that he has again got so he can not see.

I have had three cases recently which illustrate the point. I didn't bring any of these patients along today because they are business men who didn't have time to come. Indeed their presence would add little to the value of the report.

The pathology is a degenerative condition. There is edema of the retina, a degeneration of the arterioles of the retina, of the kidney and of the brain; and in the later stages of retinosis there is usually hemorrhage and a whitish or yellowish exudate which seems to have predilection for the macular region and presents itself in a form of a crescent as a rule, always found in the extreme posterior part of the eye. As a rule there is an accompanying sclerosis of the vessels of the retina, also hyaline degeneration of the intima of the arterioles.

The length of time that the patient has had this disease has more bearing on the condition than the concentration of the sugar in the blood or the urine.

In the past year a man came to me whose eyes I examined in 1943. He was 61 years old and he did a lot of close work on drawings. He was a technical man for an elevator company. His vision was fairly good. At his age he saw 20-40ths, better than I can without glasses. Minus 25 spheres gave him 20-20ths and he saw normally. His eye grounds were negative at that time. In 1946, three years and one week later, he came up to me again and I examined him and all the findings were the same. I couldn't change his glasses at all but he was complaining of his eyes tiring on close work. This was an accommodative disturbance. As I said, he did a lot of detail work, but I couldn't change his glasses at that time although his vision had gone down from 20-20ths to 20-25ths in one eye

and 20-30ths in the other. Then in October—the first examination was May—he came back and I examined him again. This time his vision was 20-50ths in one eye and 20-30ths in the other, yet I couldn't find any pathology to save my life. I worked on him hard. I couldn't understand why the change was taking place so suddenly, but this time it didn't improve. He still saw about 20-25ths with his own glasses on, although his refraction at this time plus 25 sphere with minus 50, axis 75 in one eye and the same thing in the other eye. I didn't give him any glasses, but I sent him to Dr. Cardwell and asked wouldn't he give the man a careful examination, including urinalysis, and see if he couldn't find the explanation. He called me the next day and said the patient had diabetes, which solved the problem. The only thing I could find in the eye grounds was at this last examination he had slight blurring around the edges of the disc and very slight edema. You could very easily have missed it then. Later, I examined him in December and there was no change in his vision but he felt better because the diabetic condition had cleared up under treatment and his vision at that time was 20-25ths. I haven't heard from him any more this year. That is one of those cases on the borderline. It is one of the things you run into and wonder what has happened to the man.

The next case is that of a man 55 years old, a man I used to play with when I was a boy. He had got to weigh about 300 pounds, had an enormous appetite. He felt all right. He didn't know he was sick in any way, but he got caught between a building and a truck and was considerably shaken up. At this time it was found out that he had a lot of sugar, a genuine diabetes mellitus. At that time his vision was 20-40ths in each eye and I examined his eyes for glasses and they corrected to 20-25ths in one eye and 20-30ths in the other. He was in my office last week for examination and he had the same refraction. The retinæ were red, though, and he had some congestion in the retinal veins. That would take up the two types, the borderline and the type where you could tell that there was some definite pathology.

The third patient is a lady 53 years old, with vision of 20 70ths in the right and 10 200ths in the left. Correcting this vision she gets 20-30ths in the right and 20-200ths in the left. 20-200ths is practically industrial blindness but it is better than 10-200ths. She has had diabetes for 20 years, I have only seen her one time. That was on the 20th of last month. Her eye grounds showed a chronic retinitis with hemorrhagic spots and old exudate in the macular region, particularly in the left eye. She said she had been taking insulin some time and that her eyes give very little trouble because she has found if she doesn't use them, she is better off.

I just wanted to bring those three cases to show you there are times when a patient can be real sick and you can't tell what is causing his trouble, and another when you can just begin to tell it, and, as in the last case, where the changes are far advanced. In any event, a retinitis or retinosis when you can make a diagnosis with the ophthalmoscope is in the late stage. Still, unless it destroys the whole macula, you will have vision left, usually a good deal more in one eye than in the other.

#### CURIOUS TYPES OF ABDOMINAL PAIN \*

(W. C. Alvarez, Rochester, Minn., in *W. Va. Med. J.*, Nov.)

Many persons with a constant ache in the right lower quadrant of the abdomen are thought to have chronic appendicitis, but if they never have had an acute attack of appendicitis it rarely does any good to take out the appendix. It rarely does any good, either, to operate for adhesions.

Many pains originate in the wall of the abdomen or thorax. Such pains are part of a fibrositis or of an arthritis involving the spinal joints and nerves. They are worse when a patient sits down or lies in bed, better when he or she gets up and walks about. This point is very helpful in the diagnosis. It helps, also, to grasp a fold of skin and subcutaneous fat over the abdomen and to pinch it a bit. Often, then, the patient will say that that produces the pain. Obviously, then, it is not deep in the abdomen.

In the cases of nervous women, pains in the lower half of the abdomen usually are due to a sore colon.

What are the pains due to which coming in the right lower quadrant of the abdomen after the appendix is removed? Some of them are part of the so-called mucous colitis syndrome, some are due to fibrositis of the abdominal wall, and some may be due to myositis of the iliopsoas muscle. Many, I feel sure, must be due to some sort of a storm in the brain which is referred out to the abdomen. Some I cannot explain in any way.

#### EFFECTS OF SMOKING CIGARETS ON THE HEART

(R. L. Levy et al., New York, in *J. A. M. A.*, Oct. 18th)

There were no significant differences in response, either between the normal group and the cardiac group, or between those who smoked regular and denicotinized brands.

The averages of the maximal changes observed, in both normal persons and persons with cardiac disease, showed a slight rise in systolic and diastolic blood pressures, as well as a slight increase in heart rate. No arrhythmias occurred.

There was considerable variability in the effects of smoking in both normal persons and persons with cardiac disease. This depended to a greater extent on individual susceptibility than on the presence of disease.

Smoking cigarettes did not cause cardiac pain in any of the subjects, including those with coronary disease. "Tobacco angina" is extremely rare.

Except in susceptible persons, smoking cigarettes causes only slight changes in the circulation and does not increase significantly the work of the heart. Because of the enjoyment afforded and the emotional satisfaction obtained, patients with inactive forms of heart disease may be permitted to smoke in moderation. This conclusion does not apply to those who suffer from peripheral vascular disorders.

The more important cardiac conditions in which smoking should be forbidden are congestive heart failure, the acute stages of cardiac infarction and active rheumatic carditis.



# Rational Treatment of Diabetic Acidosis

ARTHUR J. DRAPER, M.D., Charlotte, North Carolina

**A** THOROUGH familiarity with the means now at our disposal for treating diabetic acidosis, a knowledge of "what," "when," "how much," and "why" in the use of each therapeutic agent, and a method of evaluating the condition of the patient and of following the progress of treatment, these all are to be embodied in our somewhat arrogant title of "rational treatment." It is far from our purpose to submit another "system" or "plan," for, as Soskin and Levine point out,<sup>1</sup> any mechanical system is bad without individualization to meet the special needs of the particular patient. Our plea is rather for constant observation of the patient both clinically and chemically, for "quantitative mindedness," to use Marriott's phrase,<sup>2</sup> in dealing with this very grave medical emergency.

A brief review of the pathological physiology of diabetic ketosis and acidosis is in order before discussion of specific treatment. *Ketosis* represents an accumulation in the blood of significant amounts of so-called "ketone bodies," beta-hydroxy butyric acid, aceto-acetic acid, and, secondarily, acetone.<sup>3</sup> It has been shown by a number of investigators that these substances are formed in the liver by normal metabolism of fatty acids,<sup>4</sup> that they are as readily oxidized by diabetic as by normal animals,<sup>4</sup> and that they represent an emergency quick fuel to supply the needs of the organism in the event of a relative shortage of glucose<sup>3</sup>. Such use of fat as fuel takes place when there is a diminution of liver glycogen. Fat and carbohydrate, as Soskin postulates, compete for the enzyme system which carries out the process of oxidation; when the carbohydrate supply falls below a certain level, fat predominates, with resultant ketonemia and ketonuria.<sup>5</sup>

Now, what factors produce the deficiency in liver glycogen in the diabetic leading to ketosis? Most important is *insulin lack* or deprivation of insulin. In such circumstances utilization of available glucose is diminished, as is carbohydrate storage. Reference to an interesting demonstration of Mirsky's<sup>6</sup> must be made at this point. Selecting eight patients with diabetes of varying severity, Mirsky first withdrew exogenous insulin. Four of his patients became acidotic within 24 hours; the other four went into acidosis gradually over a week's time. Next he withdrew all exogenous insulin and fed the patients large quantities of carbohydrate, varying from 550 to 1300 grams per 24 hours. The first four patients again went into acidosis within 24 hours, but this time the other four did *not* show signs of acidosis. Finally, he withdrew all insulin but the amount needed to forestall "pre-

coma," and again fed them large quantities of carbohydrate. This time the acidosis diminished in all patients despite the high carbohydrate intake and glycosuria. Not only do these experiments conclusively demonstrate the importance of insulin lack as a factor in the production of ketosis, but they serve to discredit altogether the time-honored "dietary indiscretion" as a cause of ketosis. The other factor of importance in the production of clinical ketosis is *infection*, which depletes the store of liver glycogen and interferes with insulin utilization in the tissues.<sup>4</sup> Less commonly encountered factors are those which lead to excessive glycogenolysis, disturbances of the thyroid or adrenal medulla, and dehydration.<sup>5</sup>

Diabetic *acidosis* is a phenomenon secondary to ketosis. Although not toxic *per se*, the ketone bodies are organic acids which cannot be excreted in undiluted form except in small quantities by the kidneys; sodium ions are therefore called upon to neutralize them. A shift of water from the extracellular, and, eventually, intracellular fluids depots accompanies the loss of sodium ion. Consequently, loss of water and fixed base, abetted by chloride loss incident upon vomiting, leads to dehydration and hemoconcentration, which, in turn, lead to impaired renal function and extreme shift in blood pH toward the acid side.<sup>7</sup> The clinical picture of acidosis is the result of these changes. Dry skin, soft eyeballs, vomiting, abdominal distention, and mental changes are related to dehydration and salt depletion; Kussmaul respiration, to acidosis;<sup>2</sup> shock, to hemoconcentration secondary to salt depletion.<sup>8</sup> (See Figure 1.)

From this review we see that the patient in diabetic acidosis stands in need of insulin, water, salt, possibly plasma or whole blood, questionably lactate, and glucose. It goes without saying that control of infection, too, is of paramount importance, but no further reference to this factor will be made here. We shall consider the materials named in turn, attempting to answer the remainder of the questions set forth at the outset; namely, "when," and "how much."

All authorities agree that the prime need of the patient in diabetic acidosis is *insulin*.<sup>1 9 10</sup> Although some clinics use long acting insulin in conjunction with regular, most prefer the use of regular because its effects may be more closely followed. The dosage advocated by Peters<sup>11</sup> has much to recommend it: he gives regular insulin U40 or U50 subcutaneously at hourly intervals, diminishing the dose when the blood sugar approaches normal levels. A modification suggested

by Max Miller,<sup>12</sup> especially valuable in the absence of frequent blood sugar determinations, is to diminish the dose when the urine becomes cleared of acetone; it is dropped still further as glycosuria diminishes. Such a fractional method has several advantages: there is, according to Peters, little relationship between the size of the initial dose of insulin and the first fall in blood sugar, and, secondly, larger doses may make the control of subsequent hypoglycemia more difficult. Intravenous and intramuscular administration have been suggested, especially in cases with low blood pressure which slows subcutaneous absorption, but such measures, while not harmful, are seldom necessary.

Replacement of *water and salt* stands next in importance. Salt depletion, as we have seen, accounts for most of the clinical features of diabetic acidosis.<sup>2</sup> Peters, in reviewing 34 fatal cases of diabetic acidosis, found that persistent peripheral vascular collapse was the usual reason for failure of recovery, and that hypochloremia was the chief underlying factor in vascular collapse.<sup>13</sup> Loss of salt in the urine probably occurs in patients unable to take fluids orally; sodium ions are lost in the urine in neutralizing ketone bodies; and chloride ions are lost by vomiting. Replacement of salt is accomplished mainly by subcutaneous injection of isotonic saline, which also replaces the water deficit. Parenteral rather than intravenous administration is chosen because gradual absorption diminishes the danger of pulmonary edema, because the rate of absorption affords a clinical estimate of the degree of circulatory failure, and because intravenous saline may intensify late shock. Some salt and fluid are given intravenously as a vehicle for glucose, to be considered later. As for the quantity of saline to be administered, balance experiments have shown that deficits of 35 to 40 grams of NaCl often exist in diabetic acidosis;<sup>14</sup> accordingly, this quantity should be routinely administered to adult patients. In many cases, of course, such a quantity would be excessive, but, as Peters points out, hyperchloremia carries no harmful effects. After the first 17 hours one may use Marriott's bedside test of urine chloride to determine the presence of salt depletion.<sup>2</sup>

*Plasma*, or, better, *whole blood* must be given all patients who show signs of circulatory collapse. The blood pressure is the best guide, a systolic level of 90 being accepted as critical.<sup>8, 13</sup> Determinations of hemoglobin afford a rough index, which may be supplemented by a hematocrit. Prompt administration of plasma or whole blood may be a life-saving measure, yet it is one often neglected.

Another possible cause of death from diabetic acidosis, *potassium deficiency*, has received the attention of Nicholson et al., of Duke.<sup>15</sup> Such a state is the end result of severe electrolyte and fluid

depletion. Clinically it is manifested by weakness and respiratory difficulty following a brief period of improvement. Nicholson and his co-workers have reported two cases in detail, both of which showed a significant decrease in serum potassium concentration. One died; the other recovered promptly upon receiving 0.6 Gm. (10 grains) of potassium iodide by mouth every half hour until 3.6 Gm. had been given.

Although the excellent mortality figures of Joslin and Root,<sup>9, 16, 17</sup> who give no *glucose*, indicate that its use is not essential in the management of diabetic acidosis, there are several arguments favoring its early administration. First, diabetic acidosis is a condition akin to severe starvation; carbohydrate combustion is reduced to an absolute minimum.<sup>10, 11</sup> Far from being "saturated with sugar," the patient is seriously depleted with respect to sugar content<sup>1</sup>. The liver is deglycogenized. This store of glycogen must be built up before the patient can burn carbohydrate. Second, carbohydrate administration, as Mirsky has shown, diminishes ketosis.<sup>6</sup> Third, glucose prevents hypoglycemic shock consequent upon insulin administration, a misfortune which occurs more often than is recognized.<sup>10</sup> A convenient method of administration has been sketched by Peters. Immediately when treatment is begun 25-50 Gm. of glucose are given IV in 10 per cent solution with isotonic saline; during the next six hours the patient receives another 50 Gm. in 5 per cent solution, making 100 Gm. in all. Subsequent dosage is graded according to the requirement needed to prevent hypoglycemia and to supply the daily carbohydrate requirement. This last is usually satisfied by giving 200 Gm. per 24 hours. Clinical experience indicates that glucose administered by vein is retained by the patient, and that ketosis is speedily eliminated when glucose is used.

Formerly *sodium lactate* was widely employed to restore the acid-base balance; many centers continue its administration.<sup>18, 19</sup> The prevailing opinion, however, is that normal saline accomplishes the purpose satisfactorily in the great majority of cases.<sup>20</sup> Hyperchloremia caused by the giving of sodium chloride alone is usually too slight to cause acidosis of any clinical significance. Where there is severe renal impairment, with abnormal chloride excretion, however, sodium lactate may be a valuable means of prompt sodium replacement.

Lastly, a word might be said concerning general procedures in the management of diabetic acidosis. Many authors have advocated gastric lavage and enema when the patient is first admitted. Neither, in our opinion, is beneficial. Nausea and vomiting, as well as abdominal distention, the reasons usually given for performing these operations, result, as Marriott has shown, from salt depletion.<sup>2</sup>

Prompt replacement of salt will ameliorate these symptoms. Furthermore, gastric lavage and enemata serve to remove more fluid and salt which must later be replaced artificially. Drugs designed to reduce apprehension and hyperactivity, such as barbiturates or opiates, are contraindicated because they mask the degree of coma. The patient should be kept warm, and measures to combat infection should be carried out without stint.

### Case Reports

A good method of insuring "quantitative-mindedness" is to set up such a chart as is represented in Table 1. In this way one is constantly abreast of any changes in the patient's metabolic as well as clinical condition, the former, as we shall see, often foreshadowing the latter. Most important is hourly urinalysis, tests being made at hourly intervals for sugar, quantitatively if desired, acetone, and diacetic acid. Urine volume is, of course, necessary for quantitative determinations. Chloride estimations are of no value unless made at least three hours after saline infusions have been discontinued. Blood chemical studies, while helpful, are not absolutely necessary; these should include sugar,  $\text{CO}_2$  combining power, chlorides, and nonprotein nitrogen or blood urea nitrogen. Hemoglobin or hematocrit levels aid in the estimation of the state of

hydration. At the same time the patient's total intake should be recorded, not only of insulin, but of water, salt, sugar, plasma, or potassium. Portrayed in Table 1 are the author's cases, each of which was started at once on subcutaneous insulin, 500 c.c. of 10 per cent glucose in physiologic saline by vein, and 1000 c.c. of the saline subcutaneously. When the 10 per cent glucose had run in, a solution of 5 per cent glucose in physiologic saline was continued through the same needle. The fluid levels were observed at hourly intervals and marked with adhesive tape, simple calculations being necessary to estimate the quantities received during each interval by the patient. At the time these studies were made, the hospitals were requesting that no laboratory work not absolutely necessary be ordered; the charts, therefore, are admittedly incomplete.

CASE 1. J. H.—This 76-year-old colored man entered Good Samaritan Hospital with a history of excessive thirst, polyuria, and 80-pound weight loss over a period of three years. Weakness, polyuria, and polydipsia had been pronounced for eight months. For 24 hours he had been semi-stuporous.

Relevant data on physical examination were: Temperature 98.8°; pulse 84; respirations 20; blood pressure 160/80. Skin cool and very dry,

TABLE 1

Hour	URINE				BLOOD						INTAKE				
	Volume	Sugar	Acetone	Diacetic	Cl	Sugar	$\text{CO}_2$	Cl	BUN NPN	Hb	Ht	Insulin	Water	Salt	Sugar or Plasma
0		4+	4+	4+		350	29	572	8.3	82		50			
1		4+	4+	3+								40	250	225	25
2		4+	4+	2+								40	1050	935	65
3		4+	3+	0								40	600	535	30
4		4+	1+	0								40	600	535	30
5		4+	0	0								25	700	625	35
9		0	0	0					130				900	800	45
Total												235	4100	3655	230
0		4+	4+	pos.		227	19			107		40			
1		4+	4+	pos.								40			
2		4+	4+	pos.								40	700	600	40.0
3												40			
4		4+	2+	trace								40	2100	1800	80.0
5		4+	SPT	0								40	700	575	30.0
6		4+	0	0								30	450	385	22.5
7		4+	0	0								30	550	470	27.5
8		4+	0	0								20			
9		4+	0	0								20			
10		2+	0	0								10			
11		0	0	0						86		0			
Total												350	4500	383	200

completely lacking in turgor; tongue and mucous membranes dry; odor of acetone on breath; patient able to understand and respond to questions at times, but apathetic and unresponsive at others. No soft eyeballs or Kussmaul respiration were observed. The laboratory findings on admission are summarized in line 1, Table 1.

Therapy was immediately instituted as outlined above. When the urine cleared of acetone after five hours, instructions were left for the attending physician to be called if the urine became sugar free or if acetone reappeared. When the physician tested the urine four hours later, it was sugar free. The patient shortly thereafter became clammy with perspiration and unresponsive. Orange juice 200 c.c. failed to restore him, but 50 c.c. of 50 per cent glucose intravenously brought him back to consciousness. Thus we see the importance of constant observation by a physician. Despite receiving 230 grams of glucose the patient lapsed into insulin shock, a condition entirely preventable had hourly checks been continued as ordered throughout the period of treatment.

CASE 2. This 25-year-old housewife staggered into the physician's office complaining of severe pain in the pit of the stomach for 24 hours. Obviously drowsy, indeed, barely conscious, she was nevertheless able to give a fragmentary history. Three months before she had come down with a severe sore throat accompanied by chills and fever. Thereafter she had noted extreme thirst, polydipsia, polyuria, and weight loss of 20 pounds. Her appetite, interestingly, had been poor for two months. Thirty-six hours before admission she had been seized with violent nausea and vomiting which lasted for 24 hours, and diarrhea consisting of 12 copious watery stools associated with severe lower abdominal cramps. These were succeeded by boring midepigastric pain. Nausea persisted. Drowsiness and mental confusion had progressed for the last 12 hours.

Physical examination showed a gaunt, exceedingly drowsy young white woman who walked only with assistance. Temperature 99.4°. Pulse 144. Respiration 16, deep and regular. B. p. 122/90. Skin warm, dry, lacking normal turgor. Mucous membranes dry. Eyes normal; retinæ normal. Kussmaul breathing and slight tenderness over the upper abdomen were the only other significant findings. Laboratory findings appear on the first line of the lower section of Table 1. The CO<sub>2</sub> combining power and hemoglobin determinations attest the greater severity of dehydration and acidosis in this case.

In Charlotte Memorial Hospital the same measures heretofore described were instituted for therapy. Clinical recovery was spectacular; at the fifth hour the patient was joking with attending person-

nel and exulting in her sense of well-being. Ketonuria was abolished in six hours, almost as promptly as in the first case, but this time no hypoglycemic reaction ensued.

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#### FINDS LITTLE ADVANTAGE IN NEWER TREATMENTS OF ARTHRITIS

(Edi. in *J. A. M. A.*, Oct. 4th)

Best treatment of arthritis would seem to include such well established methods as physical therapy and orthopedic treatment, prescribed as indicated by the nature of the individual case. The use of proper medication for the relief of pain is warranted. All other methods such as the use of vaccines, fever, sulfur, vitamins (including activated vaporized sterol), bee venom, histamine, penicillin and sulfonamide compounds, roentgen radiation and induced jaundice are still in an experimental and unestablished stage, and the weight of evidence points to the belief that most of them are useless.

# DEPARTMENTS

## INTERNAL MEDICINE

GEORGE R. WILKINSON, M.D., *Editor*, Greenville, S. C.

### MYOCARDIAL INSUFFICIENCY (INCLUDING CONGESTIVE HEART FAILURE)

THE IMPORTANCE of following periodically by routine examinations any individual who has structural heart disease or some factor like hypertension which may produce it, is emphasized by White<sup>1</sup>; and he goes on to discuss the causation of failure, and the importance of low-sodium diet in the management.

Most factors responsible for heart failure act as strains on the left ventricle. Most important of these are 1) hypertension, usually of the essential variety, 2) aortic valve disease, and 3) large myocardial infarcts. In such individuals one should look especially for clues indicating the need of treatment. Such clues include gallop rhythm at the cardiac apex, accentuation of the pulmonary second sound, the appearance of an apical systolic murmur, alternation of the pulse, engorgement of the lung hilus shadows in the x-ray picture, dyspnea on effort that previously had not caused it, and unexplained insomnia due primarily to orthopnea. Treatment should be begun on the discovery of these clues before the right ventricle has failed and before any dependent edema occurs.

It may be wise to carry out some of the treatment prior to the appearance of the signs and symptoms provided the heart is much enlarged and under constant strain, since thereby the onset of myocardial insufficiency may be prevented or delayed.

The factors behind right ventricular enlargement and failure are 1) most commonly failure of the left ventricle, but in addition, 2) mitral stenosis, 3) extensive pulmonary fibrosis, and 4) certain congenital heart defects. In such cases the right ventricular sufficiency becomes evident by the appearance of engorgement of the jugular veins or the presence of a jugular pulse in the upright position, discomfort and enlargement of the liver, gallop rhythm subternally, and eventually dependent edema.

Both ventricles may fail simultaneously, as from acute rheumatism which commonly produces myocarditis of the *whole heart* or in infants extreme tachycardia in which the heart may enlarge and total failure. The signs of such total heart failure are like those of right heart failure, behind the heart and not involving the lungs appreciably.

For myocardial insufficiency the fundamental factors are hypertension in the systemic or in the pul-

monary circulation, chronic valvular disease, myocardial infarction, and myocarditis. The more severe the fundamental factor, the less serious need be the exciting factor to cause heart failure. Exciting factors include tachycardia, as in the case of the onset of auricular fibrillation in a patient with mitral stenosis; unusual physical strain; intercurrent infection; and pulmonary embolism. The less the severity of the exciting factor necessary to produce failure, the worse is the ultimate prognosis.

Treatment of myocardial insufficiency, including congestive heart failure, consists of four measures: 1) limitation of activity, with rest in chair or bed as needed, is of fundamental importance, but it may not be necessary to impose completely invalid life on the patient after improvement begins; 2) the administration of digitalis, which should be continued in most cases every day for the rest of the patient's life; 3) use of diuretics which may be taken by mouth, including the acid-producing ammonium chloride, and mercurial preparations which are best given intravenously. A preparation like mercupurin may be given in the dose of  $\frac{1}{2}$  to 2 c.c. every few days (or even daily for a while), or weekly for months without any particular harm and with constant benefit, but such therapy is fatiguing and it is good to omit it if possible; 4) low sodium intake. Edema in congestive heart failure is due more to sodium chloride intake than to the amount of fluid taken in.

In a diet which has proved satisfactory in its application at the Massachusetts General Hospital during the past two years sodium chloride intake is reduced to 1.5 Gm., fluid intake 3 liters, a day. There are adequate amounts of protein (70 Gm. or more), the calories are adequate at 1,870, and vitamins are included. Precautions are added to the diet list. It is possible to carry out this dietary restriction in ambulatory patients at home with proper instructions and reasonable patient coöperation. Certain salt substitutes, such as mustard or glutamic acid mixed with ammonium chloride, may make the diet more palatable.

#### The diet:

Orange juice 120 Gm., grapefruit juice 120, white bread (made S salt) 100 Gm., whole milk 620, salt-free butter 45, farina 20, beef 80, chicken 45, egg 50, fresh tomatoes 100, fresh peas 100, applesauce 120, sugar 35, cream 60.

1. No salt or soda is to be used in cooking or at the table; small amounts of ammonium chloride may be used as a salt substitute.

2. Obtain unsalted sweet butter, or wash butter free from salt; obtain unsalted bread from baker or make at home. Unsalted salad dressing must be made at home.

3. No salted appetizers, etc.

4. For "gas" or indigestion, take no carbonate or soda and no alkali powders or tablets. Use calcium carbonate only. Avoid cabbage family, turnips, rutabagas, peppers, radishes, onions, spices, greasy fried foods, and pork.

1. Paul D. White, Boston, in *Wisc. Med. J.*, Oct.

5. No food or drink other than above. All of each feeding must be eaten.

In all cases of heart failure the usual steps of bed rest, digitalization, low salt intake, oxygen, and diuresis are instituted. However, response to this therapy in right heart failure is not that expected with the usual case of congestive failure.<sup>2</sup> Oxygen only gives real benefit in the acute phase. The severe anoxia is relieved, and the invigorating effect on the heart and other vital organs is of great value in helping restore normal physiology. Digitalis lowers venous pressure, which may result in a lowering of output and lead to a fatal issue. Lowering of venous pressure would be of value if the heart were being over-filled. Here phlebotomy is useful in right heart failure if properly timed. Its use for the purpose of reducing polycythemia and thus the viscosity of the blood is not a valid one, since the increase in hemoglobin is compensatory, for increasing the oxygen-carrying capacity of the blood. In many cases of congestive failure the b.m.r. is raised. Here propylthiouracil has given some striking results especially in early right heart failure.

2. J. T. Taguchi *et al.*, in *Rocky Mountain Med. Jour.*, Nov.

## PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

### THE SURGEON GENERAL AND HIS OFFICE

WE FIND that private physicians in general have but a vague understanding of the organization and functions of the Surgeon General's office.

At this time, when socialized medicine, State medicine—by whatever name it may be designated—is calling more and more for some adjustment of our present-day private practice, it seems not only timely, but necessary, that the private practitioner become better acquainted with the office of the Surgeon General.

When I have asked private physicians such questions as: Who elects or appoints the Surgeon General? Where does he get his authority? What are the functions of his office? etc., they do not know.

Briefly:

The United States Public Health Service functions as part of the Federal Security Agency.

The Surgeon General is appointed by the President, by and with the consent of the Senate. There is no National Board of Health in the sense that there are State Departments of Health.

The Surgeon General functions under the general direction and supervision of the Administrator of the Federal Security Agency. The present Administrator is Oscar R. Ewing.

The Public Health Service headquarters at

Washington has four Divisions or Bureaus: 1. The Office of the Surgeon General, 2. The National Institute of Health, 3. The Bureau of Medical Services, 4. The Bureau of State Services.

1. The office of the Surgeon General includes: (a) The Division of Commissioned Officers, (b) The Dental Division, (c) The Sanitary Engineering Division, (d) The Division of Nursing (this is sub-divided into three main groups: Public Health, Hospital Nursing, and Nurse Education), (e) The Division of Public Health Methods, (f) The International Health Relations Office.

2. The National Institute of Health is the scientific research bureau of the Public Health Service. This work of the institute includes: Regulations of the sale of viruses, serums, toxins, etc.; The Divisions of Infectious Diseases and of Physiology, including Laboratories of Pathology, Biologics Control, Chemistry, Industrial Hygiene Research, etc. The National Institute of Cancer, created by the Federal Act of 1937, also functions as one of the Divisions of National Institute of Health.

3. The Bureau of Medical Services consist of: (a) The Hospital Division, (b) The Mental Hygiene Division, (c) The Foreign Quarantine Division (this division is of great importance to Public Health, since its chief function is to see that such diseases as cholera, leprosy, typhus fever, yellow fever, etc., do not enter the United States).

4. The Bureau of State Services. This bureau "is responsible for grants to States for the several types of Public Health Activities." The law specifies in some detail the conditions under which allotments may be made, leaving it to the Surgeon General to administer the provisions of the law. (a) The States Relations Division (this division "assists State and Local Health authorities in establishing and maintaining adequate public health services"). (b) The Venereal Disease Division (this division "investigates the cause, treatment and prevention of Venereal Disease, so as to coöperate with the State Boards or Departments of Health for the prevention and control of such diseases within the States"). (c) The Industrial Hygiene Division (this division "recruits and trains professional personnel, gives consultation services to State Industrial Hygiene Associations, etc."). (d) The Tuberculosis Control Division which was established by an Act in 1944, makes the Public Health Service responsible for developing "more effective measures for the prevention, treatment and control of tuberculosis."

The Division of the Public Health Service which will affect our present system of private practice most is the "Bureau of State Services."

Further information may be had by writing your Congressman for a copy of the Public Health Service Act of 1944.

# THERAPEUTICS

J. F. NASH, M.D., Editor, St. Pauls, N. C.

## THE TREATMENT OF EPILEPSY

EVERY physician needs to know the best means of management of the epileptic. Whatever else may be wrong with a patient, medically or surgically, epilepsy is apt to complicate the situation.

Merritt's<sup>1</sup> account of the evaluation of the treatment to its present degree of efficiency is here set forth in essence.

On the occasion of the presentation of a paper on the analysis of 52 cases of epilepsy before the London Medico-Chirurgical Society in 1857, Dr. Charles Locock, the presiding officer, remarked that since the seizures in epilepsy were often related to hysteria or the menses, he had been led to try bromide of potassium by an observation made by a German physician that it was capable of producing temporary impotence.

Whenever convulsive seizures are associated with a surgically removable lesion of the brain, such as tumor or abscess, removal of such a lesion is indicated. Relief of convulsive seizures will result in only half the cases of meningioma and in a much smaller percentage of cases of glioma or abscess. In such cases, further treatment with drugs is necessary.

Following removal of cortical scars secondary to cerebral trauma, vascular lesions and birth injuries on the assumption that these act as a trigger mechanism for the seizures, it is difficult to evaluate the results because of the fact that these patients are treated with anticonvulsants after the operation.

Phenobarbital can be tried first in the treatment of patients with infrequent grand mal seizures. If satisfactory results are not obtained, phenytoin sodium should be tried. A combination of phenobarbital and phenytoin sodium is often more effective than either used alone. *In using these drugs in combination a full therapeutic dose of each drug must be used.* In patients with frequent grand mal seizures or attacks of the psychic equivalent or psychomotor type, phenytoin sodium is the drug of choice. The treatment of petit mal attacks in children has not been standardized.

For the average adult the initial dose of phenobarbital should be  $1\frac{1}{2}$  grains daily, at bedtime. After a trial period of two weeks or so increases can be made up to  $4\frac{1}{2}$  to 6 grains per day. If this is not sufficient to control the seizures it is probable that a further increase will not be of value. It has been found that children require almost as large a dose as adults. For children seven years of age the minimum dose is  $1\frac{1}{2}$  grains per day.

1. H. H. Merritt, New York City, in *Jl. Mt. Sinai Hosp.*, Nov.-Dec.

Phenytoin sodium (dilantin sodium) has the advantage over phenobarbital and the bromides in that it has little or no hypnotic activity. The regulation of the dosage is more difficult, however, and minor toxic symptoms are more frequent. The toxic symptoms are not serious and it is almost impossible for a patient to take a fatal dose. In the average adult, the initial dose  $1\frac{1}{2}$  grains t.i.d. If any seizures occur after two weeks of this dosage it should be 6 grains daily. Further increases in the dosage should be by increments of  $1\frac{1}{2}$  until the maximum dose of 9 grains daily is reached. In the majority of adults 6 grains is the optimum dose. In children over 12 or 14, the average dose is  $4\frac{1}{2}$  to 6 grains and in younger children 3 to  $4\frac{1}{2}$  grains. The medicine can be given in divided doses spread out through the day or it can be given all in one dose at bedtime. The drug is quite alkaline and it may cause gastric upsets. Give along with the meal or with some food.

The use of various hydantoin derivatives is still in the experimental stage and none are available on the open market as yet.

Experiments with tridione have given encouraging results in the treatment of petit mal attacks in 50 per cent of the cases. It is sometimes possible to discontinue the use of the drug without recurrence of petit mal seizures. The drug is of no value in the control of grand mal or psychomotor seizures. If patients are subject to one of the latter types of seizures, as well as petit mal, phenytoin sodium or phenobarbital should be given along with the tridione.

The dosage of tridione for the treatment of petit mal varies from 0.3 to 2.0 grams daily, starting with 0.3 gram and gradually increasing until the seizures are controlled or toxic symptoms appear. Among the toxic symptoms are skin rashes, which require a cessation of the treatment, and unusual sensitivity to light—apt to develop in adolescent or adult patients, uncommon in young children not accompanied by any change in visual acuity and disappears when the medicine is discontinued.

Two cases of fatal aplastic anemia following the use of tridione for six and 10 months have been reported. Prolonged use have decreased the percentage of pmns. without decrease in the total number of leucocytes. It is recommended that blood count be made monthly in patients using tridione. Discontinue if any significant changes are found.

Status epilepticus. After coma for 12 to 24 hours with convulsive seizures, the attack may cease spontaneously and the patient recover consciousness after 24 to 48 hours, or death may occur. Good results can sometimes be obtained by anesthetizing with chloroform or ether. Termination of the seizures is more certain with the injection

tion of sodium phenobarbital or paraldehyde intravenously with less risk—0.4 to 0.8 gram (6 to 12 grains) of sodium phenobarbital dissolved in distilled water or 3 to 6 c.c. of paraldehyde.

Failure to obtain good results is often due to inadequate dosage.

## SURGERY

WILLIAM H. PRIOLEAU, M.D., *Editor*, Charleston, S. C.

### APPENDICITIS IN THE YOUNG CHILD

WHILE APPENDICITIS before the age of three years is not uncommon, it is frequently overlooked in the early stages and often complicated when diagnosed. The lessons taught by Williams<sup>1</sup> in dealing with 42 children with appendicitis in this age group will serve every reader.

Bellyache and vomiting are the predominant symptoms. The illness almost always begins in a child who has been quite well. The initial symptom may be peevishness, feverishness, refusal of food, and vomiting. Thirty-six of the 42 mothers were certain that their children had pain, discomfort, or soreness in the belly. In 21 the pain appeared to come in spasms, during which the child would whimper or cry. These children may be bright and active in between the spasms of mild bellyache. We should not interpret a mild pain as of no importance. Thirty-nine vomited repeatedly. Vomiting may precede or follow the onset of pain. With abdominal pain and vomiting in the young child appendicitis should at once be suggested as a probable cause. In almost half of the patients the bowels acted normally; 14 were constipated, while nine had diarrhea. In three children with pelvic appendicitis and local peritonitis the frequent and painful passage of urine was the outstanding feature, and in one retention occurred.

To persist with an immediate examination is worse than useless, for reliable information will not be obtained and examination later may be made more difficult. Call again in half an hour or wait over a cup of tea, and by this time the child is often coöperative and examination easier. Should the child still be fretful and resentful the practitioner is wise to refer the patient to a hospital. In hospital it may be necessary in a few cases to administer either a sedative or a light ether anesthetic to obtain a satisfactory examination of the abdomen.

Abdominal tenderness and rigidity are rarely absent. Observe restricted movement of part of whole of the abdomen. Palpate with the warm hand pressing gently on the abdomen and quietly feeling with the finger-tips as the child breathes. Always begin palpation in the upper and left and grad-

ually move to the right lower quadrant, the suprapubic region, and the right flank. Tenderness is shown by wincing or attempting to pull away the palpating hand. Objective evidence of tenderness is much more reliable than subjective. Suprapubic tenderness, especially on the rt. and toward pelvic cavity is quite common owing to the frequency of pelvic appendicitis.

Muscle-guarding is best determined by comparison and by judging whether relaxation or guarding remains when the child is breathing quietly. Do not move the palpating hand rapidly from area to area comparing muscle tension, as one is likely to be deceived by voluntary guarding. The area of muscle on guard may be quite small. In pelvic appendicitis it is frequently in the lower portion of the right rectus muscle.

An abdominal mass in half of these patients was felt as a firm discrete non-mobile mass, but in a few as a diffuse thickening. If the child cannot be coaxed to be quiet during the examination then it is useless and misleading to attempt rectal examination.

Neither pulse nor t. gives a reliable indication of the inflammatory state inside the abdomen. A child may be dangerously ill with a normal t. or one of only 99° F., while a t. of 103 or 104° F. by no means makes a diagnosis of appendicitis unlikely. A very rapid weak pulse is a good indication of the severity of either dehydration or toxemia or both, and usually is found in patients with general peritonitis. In some patients with appendicitis the pulse rate is only slightly increased.

A history from the mother of continued bellyache or discomfort and repeated vomiting places the responsibility on the medical attendant of suspecting appendicitis and of acting accordingly. Determination of either focal abdominal tenderness or rigidity, or both, lessens doubt. If, in addition, a mass is present in the pelvis or lower half of the abdomen, then one should be very confident of the diagnosis. Should abdominal tenderness and rigidity be minimal expert opinion should be sought.

Two kinds of patient present a different clinical onset and pattern which may be misleading. The first is the patient who has predominantly urinary symptoms and is suspected of having pyelocystitis. Patients with pyelocystitis who have pain and frequency of micturition have urine which is almost without exception heavily laden with pus cells and bacilli. The second is the patient with diarrhea and abdominal pain who is suspected of having gastroenteritis. Diarrhea often occurs in pelvic appendicitis. Diagnosis is very difficult in the early stages of the illness, for the abdominal physical signs are usually minimal or absent and rectal tenderness is difficult to assess. Should a pelvic mass be present

1. Howard Williams, Children's Hospital, Melbourne, Australia, in *Brit. Med. J.*, Nov. 8th.



diagnosis is at once established.

Leucocyte readings are from normal to 30,000 with a pmn. response. A normal, low, or very high reading would not for a moment deter from making a diagnosis of acute appendicitis.

There were eight deaths among the 42 patients. Three occurred in 11 patients aged 1 to 2 years; the remaining five deaths were among the 30 patients aged 2 to 3 years. The most important factor in mortality was the presence of general peritonitis. Seven of the 15 patients with general peritonitis died. The remaining death in the series was that of a patient with a mass and an abscess who developed a general peritonitis after operation. Seven of the eight children who died had been ill for longer than 48 hours, while the other child had been ill for 40 hours.

The reduction of deaths from appendicitis in the adult by 60 to 80 per cent in the past ten years is due to early diagnosis and early operation. We must be more suspicious of appendicitis in infancy and childhood.

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## GENERAL PRACTICE

WILLIAM R. WALLACE, M.D., *Editor*, Chester, S. C.

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### AIR-BORNE INFECTION

THE IMPORTANCE and the modus of transfer of infections by air are matters of perennial interest. A British expert in this field,<sup>1</sup> whose official position in the late war gave opportunity for learning much, sets forth his views.

These observations and the deductions from them constitute a great contribution toward the clarification of a muddy subject.

All of us can learn from it much of practical value in the prevention of infections of many kinds.

The maximum risk of air-borne infection, especially through droplets, is present where human beings are crowded together as they are under modern transport conditions. During the war air-raid refuges and tube stations were crowded, all the conditions for epidemics appeared to be present. But apart from German measles, which did not appear to be related to overcrowding, no epidemics broke out. The number of carriers of meningococci increased alarmingly, so that nearly all soldiers in certain barracks were affected; but the rise in the incidence of meningitis was never a serious problem. Transports going to Egypt were grossly overcrowded: during the first week of the journey respiratory infection was universal, but the rest of the two-months journey was healthy. This was not true of native troops from Africa, who suffered severely from pneumonia, chicken-pox and

meningitis. Is it not a fact that immunity from the common respiratory infection is closely related to constant exposure to infection? Herd immunity is a real thing. If it is not possible to deal with crowded transport conditions, what merit is there in dealing with offices, places of amusement, restaurants, and churches?

There are two exceptions to this rule: the first, that times of pandemics with a new or rare infection deserve special consideration; the second, that children represent a group with little or no acquired immunity and spend much of their time in homogeneous groups. There is a lot to be said in favour of air sterilization in schools, and still more in favour of keeping children away from crowded places. The cinema is considered a greater danger to child health than to child morals, and the special matinees for children are ideally devised to spread infections. If we are again faced with a pandemic of influenza every method of limiting the dose of infective agent should be employed. Whether any known method of air control would help is, in my opinion, doubtful.

In hospitals, particularly fever and children's hospitals, there is a clear case for control of air-borne infection. The methods available fall into several headings—control of droplet infection, ventilation, control of dust, and sterilization of air. Droplet infection must mainly be controlled by adequate masking. All nurses in infants' wards should be masked, and nurses with even minor respiratory infections should not remain on duty. Operations should be silent. Sneezing requires efficient use of handkerchiefs, preferably of paper used only once. Proper ventilation is also essential. In operating rooms and surgical dressing-rooms, which at least for septic cases should be separate from main wards, a positive pressure of filtered air over the patient prevents banking-up of infected particles, and blowing away particles emitted by attendants. There is no substitute for good ventilation in the control of all forms of infection. In one hospital during the war an outbreak of cross-infection in casualties ceased only when the windows were closed in during an air-raid.

Dust control is a paramount concern. By air-borne infection we usually mean infection by contaminated dust. Treatment of floors by spindle oil and of blankets by a special oiling method will control dust to a remarkable degree and entirely prevent the phenomenal rise of air bacteria during bed-making. In the removal of infected plaster casts from suppurating wounds oil should be used along saw cuts.

Sterilization of air by antiseptic mists and smokes and by ultra-violet light is effective against droplets. They break down with dust and since dust is the most dangerous infecting agent their use is severely limited.

1. R. J. V. Pulvertaft, in *British Med. J.*, Oct. 4th.

Bacteria suspended in air can be as readily killed by ultraviolet light as by bactericidal mists. The names of Wells and Hart will always be closely associated with this method.

The Americans have been using ultra-violet rays for air sterilization for many years. It is a standard equipment in many schools and hospitals. Wells calculates that it is equivalent to 500 turnovers of air per hour, compared with the 25 turnovers by the best ventilation. In groups of schools the incidence of susceptibility to measles in an epidemic was from 9 to 15.5 per cent in irradiated schools, 55.3 and 51.8 per cent in two not irradiated. Similar results have been found with chicken-pox.

Air-borne sepsis and cross-infection are common. There is still a tendency to laugh away the protagonists of the control of air-borne infection as fad-dists. But there is far too much hospital-bred infection, and far too many "sterile" operations go wrong. It is predicted that the time will come when these methods of controlling air-borne sepsis discovered in Europe and developed in America will be in general use on both sides of the Atlantic.

## OBSTETRICS

H. J. LANGSTON, M.D., *Editor*, Danville, Va.

### CONTROLLED EARLY AMBULATION IN OBSTETRICS

ONE OF THE GREATEST of the recent improvements in the management of surgical and obstetrical cases is getting the patient out of bed early.

Burktons<sup>1</sup> reports a series of 200 carefully observed and recorded obstetrical cases with conservative early ambulation.

The routine employed was as follows: First 18 to 24 hours: Patient to use high backrest and to move about freely in bed.

Second 24 hours: To sit on edge of bed and "dangle" legs for 15 minutes on two occasions.

Third 24 hours: To stand by side of bed, walk to and sit in chair for  $\frac{1}{2}$  hour on one occasion.

Fourth 24 hours: To walk to and sit in chair for  $\frac{1}{2}$  hour on three occasions, including bathroom privileges.

Remainder of hospital stay: Up and about ad lib.

Almost without exception, every new mother has been enthusiastic about early rising. The most gratifying response was from the multiparae who in previous pregnancies were forced to remain flat in bed for 10 to 15 days postpartum.

The patient feels so well on leaving the hospital it is necessary to warn the new mother not to be too active too early.

There were no cases of episiotomy disruption. In four instances the skin separated slightly.

<sup>1</sup> H. F. Burktons, Cleveland, in *Ohio Med. J.*, Oct.

The mesial type episiotomy seemed productive of less pain on sitting than was the case with the mesiolateral variety. However, in both types, healing was uneventful except for the four patients mentioned.

The suture material used was chromic 0,00, and 000, chromic 00 being utilized most often.

In all but one instance the involution of the uterus was entirely satisfactory. The one continued to bleed slightly at six weeks and the uterus was felt to be subinvolved.

The nurses often remarked on the rapidity with which the early ambulator recovered her strength and on her brighter mental attitude.

There was lessened difficulty with bowel and bladder function.

It appears that early rising of the new mother will result in a decreased incidence of phlebitis and embolism.

Thus far there are no apparent or demonstrable disadvantages. The fear that early rising would result in excessive bleeding, episiotomy dehiscence, increased uterine prolapse or retroposition has not materialized.

(Since completion of this study an additional 950 postpartum patients have been early ambulated with results comparable to those presented above.)

## GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

### PULMONARY EMBOLISM AND VENOUS THROMBOSIS

VENOUS thrombosis with pulmonary embolism is most commonly seen following major surgical procedures, and so most concerns the surgeon; but the fact that it may complicate trauma to the extremities, or illnesses which require long periods of bed rest makes it the duty of the general doctor to be on the alert as to these developments.

In 95 per cent of the cases, pulmonary emboli can be traced to the leg vein.<sup>1</sup> Early recognition is requisite to prevent death in many instances from pulmonary embolism.

In 500 cases of deep venous thrombosis swelling of the leg and local tenderness over the deep veins was found in 66 per cent; in 41 per cent, discomfort in the calf or popliteal region or on forceful dorsiflexion of the foot. Another useful sign was the distention of the superficial veins over the lower leg and foot, as compared with the normal extremity.

A rise in the t. p. and r. in a patient with a preceding normal chart, when no other cause can be found, is frequently evidence of a small pulmo-

<sup>1</sup> R. R. Linton, Brookline, Mass., in *Jl. Med. Soc. N. J.*, Oct.

nary embolus. In some patients, the first warning of deep venous thrombosis is the occurrence of a nonfatal pulmonary embolus—in this series in 35 per cent. Examination of the legs in these patients was negative for pain, tenderness and swelling. In cases suspected of pulmonary infarction, antero-posterior and lateral roentgenograms of the chest should be taken.

Sudden severe pleuritic type pain, especially with hemoptysis, is almost pathognomonic of pulmonary infarction and deep venous thrombosis of the lower legs. Ecg. in some cases is of aid in differentiating between pulmonary embolism and coronary thrombosis.

Deep venous thrombosis cannot be prevented in all postoperative patients, but its incidence can be greatly reduced.

In patients who must remain in bed, bicycle exercises (active or passive) are of definite benefit. Elevate the head of the bed with blocks under the bed posts so that the patient is lying on a slight incline. A board at the foot of the bed, so that the patient can push against it as he slides down will result in contraction of the calf muscles, thus favoring the emptying of the veins in the areas where thrombosis generally originates.

Abdominal distention is to be corrected, because it interferes with venous return from the lower extremities. Tight abdominal binders should be abolished for the same reason. Abdominal incisions should be made and sutured so that the patient may get out of bed on the first or second postoperative day, made to walk and not allowed to sit in a chair for at least a week. The sitting position favors venous stagnation with resulting thrombosis. Early ambulation will not prevent this in all cases. Examination of the extremities should still be carried out at frequent intervals. The anticoagulants, heparin and dicumarol, should be used chiefly for the prophylaxis of thrombo-embolic disease. Heparin is the more difficult to administer, but its effect can be more readily controlled.

The bilateral interruption of the superficial femoral veins is another important prophylactic measure. In Linton's patients this is done on every individual 50 years of age or older who is subjected to a major abdominal or pelvic operation for malignancy. The venous interruption should be of the superficial femoral at its junction with the deep femoral vein, no blind end of superficial femoral vein being left in which a thrombus might originate and propagate upward into the common femoral and iliac veins.

ed with mesantoin in combination with phenobarbital. Fifty-five of them had previously been taking diphenylhydantoin sodium, usually combined with phenobarbital. The rest had been taking phenobarbital alone.

The change in treatment reduced the total number of grand mal attacks experienced by these patients 60 per cent, lessened the severity of their convulsions, and produced fewer toxic reactions. In 22 of the patients the seizures ceased completely shortly after the new regimen was instituted.

## EARLY DIAGNOSIS OF TUBERCULOUS MENINGITIS

PREVIOUSLY a diagnosis of tuberculous meningitis has been a sentence of death, only to be accepted when there was no longer any possibility of error. The chance of cure with streptomycin has altered that, and early diagnosis has become a matter of particularly importance. So strongly does Wilkinson<sup>1</sup> open the case; and he goes on:

The chief aids to diagnosis are clinical and neurological examination, examination of the cerebrospinal fluid, and radiography of the lungs. Any one of these may first provide evidence on which to base the diagnosis. Gross evidence, either clinical, laboratory, or radiological, means that the disease is becoming established, and brain damage may be already present. Fever of unknown origin and persistent headache in a child, especially one who is a tuberculosis contact or has some overt tuberculous disease, merits lumbar puncture and chest radiography. Though there are no neurological signs, and when the cerebrospinal fluid is normal except possibly for a slight rise in the lymphocyte count, early miliary tuberculosis may be seen in the lungs; or, if the chest x-ray examination and neurological signs are negative, the cells in the cerebrospinal fluid may be increased.

Early neurological signs may be equivocal and it is unwise to delay until they become well established. If there is present a combination of fever of unknown origin, persistent headache, and some definite evidence, however slight, from any of the triad—clinical, laboratory, or radiological—then streptomycin should be started. A specimen of the cerebrospinal fluid, injected before treatment into a guinea-pig, will probably reveal later whether the patient has been cured of tuberculous meningitis or an error in diagnosis has been made. In either case the patient's life will have been safeguarded to the best of the doctor's ability.

1. M. C. Wilkinson, in *Brit. Med. J.*, Sept., 27th.

## NEW METHODS OF THERAPY IN CIRRHOSIS OF THE LIVER

(L. M. Morrison, Los Angeles, in *J. A. M. A.*, June 21st)

The treatment consists in the administration of methionine, 2 Gm. daily; choline chloride, 2 Gm. daily, and an extract prepared by the filtration and concentration of an aqueous liver solution containing vitamin B complex; a high protein (higher than heretofore advocated), low fat, moderate carbohydrate diet and frequent feedings of skimmed milk.

## EPILEPTIC SEIZURES REDUCED 60 PER CENT BY "MESANTOIN"

(A. L. Loscalzo, New York, in Oct. 25th issue *J. A. M. A.*)

For three years Loscalzo studied 67 cooperative patients afflicted with grand mal who for the first time were treat-

A group of 20 patients with cirrhosis of the liver was so treated from 1943 to 1945; the results were compared with those in a control series of 23 such patients observed from 1938 to 1940 who did not receive any of the forms of treatment given to those in the treated group.

After two years all patients in the treated group without ascites were alive, as compared with three deaths among the 11 patients of the control series; and eight of the nine treated patients with ascites were alive, as compared with three of the 12 in the control series.

Six of the nine treated patients without ascites had returned to normal activity in two years, as compared with two of the 11 in the control group.

Four of the nine treated patients with ascites had returned to normal activity in two years, as compared with two of the 12 patients in the control series.

## DENTISTRY

J. H. GILSON, D.D.S., *Editor*, Charlotte, N. C.

### PHLEGMON OF THE FLOOR OF THE MOUTH (LUDWIG'S ANGINA)

THE TERM "Ludwig's angina" has been used for many years to describe a particular type of infection of the floor of the mouth. Seley<sup>1</sup> tells us that, since the disease is not an angina and was not first described by Ludwig, the term "phlegmon of the floor of the mouth" should be substituted. The substance of Seley's excellent dealing with this dreaded disease:

The infection usually arises from an infected lower molar tooth and rapidly spreads to the cellular tissues of the floor of the mouth, then extends in a plane deep to the geniohyoid and mylohyoid muscles. It may and does spread to the contralateral side of the neck into the opposite submylohyoid space. In the series of cases studied infection followed extraction or toothache (as a result of dental infection) in the majority. In one case there was simply poor oral hygiene and in another the direct trauma of a dental burr to the floor of the mouth was the exciting cause. In only one instance did the phlegmon follow extraction of an upper molar. The indiscriminate use of local infiltration anesthesia in and about an infected tooth may be a contributory causative factor.

A history of extraction or dental sepsis involving lower molar tooth or teeth, followed by pain, swelling, trismus, fever (with or without chill), rapid pulse, toxemia, elevation of the tongue, brawny induration of the submandibular region associated with difficulty in talking, swallowing and breathing, constitute the classical signs and symptoms. Roentgenograms of the neck may show air in the tissue spaces. A pericoronal abscess about an unerupted third molar or an acute alveolar abscess may produce trismus, swelling of the jaw, fever and pain. However, when edema of the floor of the mouth, elevation of the tongue and brawny induration of

the submandibular region are present the process of necessity is a phlegmon of the floor of the mouth. This is a serious disease and the mortality may be as high as 40 per cent. Death is caused by suffocation or spreading infection. The avoidance of undue trauma in tooth extractions and the limited use of local infiltration anesthesia in infected cases may be of value in preventing it.

Once the diagnosis is made a decision as to the correct therapy must be applied without delay.

The various sulfonamides have been tried and it is the consensus that they are of little value. Penicillin is now being used and there have been a number of favorable reports. Of three personal cases in which penicillin was used two were uninfluenced and in the other the patient felt better and was less toxic but the infection continued to spread and necessitated very wide surgical drainage. He required excision of both submaxillary glands, division of the mylohyoid and geniohyoid muscles and excision of considerable musculature for gangrenous myositis. The penicillin merely masked the progress of the disease and his recovery was attributable to radical surgery.

Chemotherapy without surgery can be safely employed only in early mild cases. The patient must be constantly observed and if marked improvement does not occur within 8 to 12 hours surgery should be performed. The improvement should be objective using the edema of the floor of the mouth, the sub-mandibular induration, the temperature level and pulse rate as guides.

Intraoral incision was performed in several of the cases and in only one was there evidence that the course of the disease was favorably influenced. This was a mild case and only a few drops of pus were obtained at operation. Spontaneous evacuation of pus into the mouth took place in five cases all of which recovered. Surgical drainage should be external (extra-oral) with or without removal of the submaxillary salivary gland. Pus (usually foul) under the mylohyoid muscle is a constant finding and adequate drainage is necessary for recovery.

### THE EYE IN THYROID DISEASE

(J. H. Dunnington, New York City, in *Dig. Ophthalm. & Otolaryn.*, Oct.)

Every physician is familiar with the ocular manifestations of thyroid disease; not every one realizes that blindness is not an infrequent sequela of improper management. The ophthalmologic problem is preservation of sight. Corneal ulceration from exposure is the complication he fears most. In the presence of any lagophthalmos protection of the cornea is essential, and best accomplished by the creation of adhesions between the lid margins. These can be placed in such a manner as to give protection without obliterating vision. They can be left as long as desired and readily severed at any time. Early employment of them before extensive signs of edema occur is most desirable.

1. G. P. Seley, New York, in *Ill. Mt. Sinai Hosp.*, Nov.-Dec.

# HUMAN BEHAVIOUR

JAMES K. HALL, M.D., Editor, Richmond, Va.

## KIRKBRIDE'S

*Dr. Kirkbride and His Mental Hospital*, by Dr. Earl D. Bond, a book of only 162 pages, has afforded me more satisfaction than anything I have read from the pen of a medical man for many a day. The volume is just off the press of J. B. Lipincott Company, Philadelphia. The worth of such biography cannot be measured in terms of mere money. But the book is infinitely more valuable to me than the four dollars I have exchanged for it.

Those of us who were educated in Philadelphia acquired in our student days some knowledge of the meaning of the name Kirkbride in reference to the care of the mentally sick. The constantly increasing prestige of the first medical superintendent of the Department of Mental Diseases of the old Pennsylvania Hospital finally caused the hospital to lose its official name and to come to be known as Kirkbride's. The book tells us about the Quaker country boy whose life and labours have made an everlasting contribution to our knowledge of the condition of those who are not mentally well.

But the book is much more than a life of Dr. Kirkbride. The little volume gives us an account of the civilization of Philadelphia for many decades. And, like ancient Tarsus, Philadelphia was no mean city. Even in the days of the American Revolution, Philadelphia was in size the second city of the British Empire. It is little wonder that England was unwilling to give up her American Colonies.

Thomas S. Kirkbride was born about forty miles up the Delaware River above Philadelphia. His earliest ancestor had come into that region even a year ahead of William Penn, long before 1700; and the Kirkbrides had been throughout the succeeding generations good Quaker citizens, good neighbors and first-class farmers. From his father's home in his childhood Thomas Kirkbride could look across the river to Trenton in New Jersey. In his boyhood he must have heard of Washington's perilous crossing of the Delaware in that neighborhood. But the Kirkbrides were Quakers, they did not believe in warfare and there was probably no glorification of the Revolution or of Washington in their home.

1809 was a fruitful year in American history. In that year I recall that Abraham Lincoln was born; and Edgar Allan Poe and Charles Darwin and Dr. Oliver Wendell Holmes and Thomas Story Kirkbride, about whom few people, outside of a limited domain of medicine, know anything.

The many years through which Dr. Kirkbride

lived and his varied activities must have caused him to realize that the best features of his good education were acquired in his father's home and on his father's farm. Today that farm would be looked upon as a model, so well managed it was, so productive, and so attractive. By his father young Kirkbride was instructed in the growth of food, for man and beast; he learned how to care for live stock and their value. His father was constantly improving the farm and adding to the attractiveness of the home. Fruits of many varieties were grown, and grapes. And shade trees, shrubbery and flowers were carefully selected for the lawn. In later years the grounds of Kirkbride's Hospital reflected the knowledge that he had acquired at his father's home.

The boy's education was continued at an excellent private school across the river in Trenton. He was probably already thinking of medicine as his life work. Soon he was a preceptorial student of Dr. Nicholas Belleville, one of the busiest practitioners of Trenton. Dr. Belleville had come over with Lafayette, but recollection of his violent seasickness during the stormy passage made him unwilling to return to France. He was a scholarly man, a diligent student of medicine, and he taught his young daily companion to observe, to record and to think. After a year's preparation under Dr. Belleville, Thomas Kirkbride came down the river to Philadelphia and matriculated as a student in the school of medicine of the University—in 1828. At that time the University was located on Market Street, near Ninth. A few blocks away, between Spruce and Pine, was the Pennsylvania Hospital. There it is today.

The Philadelphia of 1828, into which young Kirkbride came as a medical student, had a population of about 140,000. The people were settled, in their homes and in their business, along the Delaware. There were probably few residences west of Eighth or Ninth Street. Kirkbride roomed and boarded at 141 Arch Street, then called Mulberry. Market Street was High Street. Some of his teachers were Dr. Nathaniel Chapman, Dr. Samuel Jackson, Dr. William Gibson; the Dean, Dr. William E. Horner, gave good lectures in Anatomy, and Dr. John Redmon Coxie in materia medica. Several members of the faculty were prevented from teaching by poor health; in that number was Dr. Philip Syng Physick.

After graduation in medicine in 1832, Dr. Kirkbride planned to spend a year on his father's farm for the sake of his health. But the Board of Managers of The Friends' Asylum, in Frankford, long ago taken into the city, induced him to become resident physician in that institution. At that time the Quaker Sanatorium for psychiatric patients had been in existence for about fifteen years. It had a

patient population of about fifty, and an annual admission of about the same number. There Dr. Kirkbride lived in twenty-four hour association with mental patients. He became acquainted with their behaviour, with the condition of their minds, their hopes, their fears, and he was afforded opportunities for diagnostic and therapeutic work. His residency was so pleasing to the Managers that they hoped to retain him.

But he went to an internship that afforded larger opportunities in the Pennsylvania Hospital. There his roommate was his classmate, Dr. William W. Gerhard, who had just spent two years in study in Paris, much of it under the great Louis, of fever fame. Three or four years later Gerhard's unceasing investigative activities startled the medical world by his differentiation of typhus and typhoid fever. The young investigator was a constant stimulus to Dr. Kirkbride, both by the diligence and the well-directed aim of his researches. The two young doctors published the first clinical reports known to medicine. They were up and coming young physicians.

From 1835 to 1839 Dr. Kirkbride did private practice in Philadelphia. At 94 Arch Street, near Fourth, the single front room served as bed room at night and as office during the day. Behind his room was a Quaker Meeting House, across the street his student boarding house, and near by were two excellent, well established physicians who were helpful to him. He did so well in practice that in 1839 he was married to Ann West Jenks, daughter of one of the substantial merchants of the city.

Just when Dr. Kirkbride was contemplating accepting a position as surgeon on the staff of the Pennsylvania Hospital he was asked to become Medical Superintendent of the Department for the Insane of that Hospital.

The Managers of the old Pennsylvania Hospital had purchased for that department a splendid old estate of more than 100 acres far out of the city—at that time, but now at 49th Street and Market. A building designed especially for the so-called insane was ready for occupancy by New Year's Day in 1841. The land cost about \$28,000 and the building considerably more than \$150,000. But at that distant day money possessed purchasing power, and a splendid fire-proof building was erected. No other hospital in the city was better housed. Quarters were available for 200 patients. Each patient had a private room. Special attention had been given to ventilation, heating, and to the comfort of the patients. The corridors were spacious, large parlors were provided as sitting rooms for patients. The structure of the building had in view the classification of the patients in suitable small groups. Although the Managers were without

experience in such hospital construction, they seemed to have thought of every possible need in creating the building. The grounds were spacious and attractive. There was a good farm, a large vegetable garden, a dairy, poultry yard, shade trees, shrubbery and flowers in great abundance.

Many patients, confined in cramped quarters in the old Pennsylvania Hospital in the heart of the city, must have felt that they had been transported into an undreamed of Paradise, in which all the comforts of a good home were provided. And soon they were enjoying the spacious and attractive grounds. Few sick folks today are better domiciled and even fewer can look upon and have daily exercise upon such grounds.

The new hospital, so well housed and so ideally located, must fit itself to provide the best care and treatment for the patients. Dr. Kirkbride visited the State Hospital at Worcester, and the MacLean Hospital near Boston and the Hartford Retreat in Connecticut and Bloomingdale Hospital, at White Plains, New York. He carried back to his hospital all the information he could acquire from those hospitals. He had to organize a medical staff, a nursing service, and especially those activities now comprehended by the term occupational therapy. He was insistently anxious to develop an understanding of each patient, and his efforts, in diagnosis and in treatment, were always individualized. He respected the personality of the patient. The reputation of the hospital spread, patients came in such numbers that another building was brought into use late in the fifties. That building, every item entering into its structure, was the conception of Dr. Kirkbride. The plan of the building was unique. The distinctive structure became known as the Kirkbride plan. At Raleigh, the State Hospital is a Kirkbride building; so is the State Hospital at Morganton. In more than half the states of the Union there are state hospital buildings patterned after the structure still in use for almost a hundred years on West Market Street in Philadelphia.

Dr. Kirkbride gradually came to be thought of as the best psychiatrist, if such a term had then been in use, in the United States. He was incessantly busy. Patients came to him and were brought to him from far away. He was thought of as knowing more about hospital construction and hospital administration than any other.

Yet he had his troubles. The care of the so-called insane was scarcely looked upon even in the Philadelphia of that day as a function of medicine. Dr. Kirkbride was often attacked by the newspapers; his hospital was frequently ridiculed and assailed, and many patients were released by judges before whom they had been brought by a writ of habeas corpus. And not infrequently phy-

sicians subjected Dr. Kirkbride to destructive criticism. But he remained apparently unperturbed. He was a Quaker.

Not even the thunder of the guns at Gettysburg caused him to recognize even the existence of the War between States in his famous official annual reports. But in private correspondence he expressed a high opinion of President Lincoln, with whom he conferred; and he saw virtue where there must have been little of it—in old John Brown and in Edwin M. Stanton, even though the latter's father was a physician whose father lies buried somewhere in North Carolina. And Dr. Kirkbride advocated the banishment forever of the leaders of the Confederacy and the confiscation of their property. One may wonder whom he would have designated as leaders. And one may wonder, too, if Dr. Kirkbride had ever heard of Nat Turner's bloody insurrection in Virginia.

But the war years brought death into his home. During those tragic years his mother died, and his wife, and his aged father. He remained apparently unperturbed. His time and his thought were devoted to his patients.

Dr. Kirkbride's second marriage, in 1866, to Elizabeth Butler, must have been as fortunate as his first marriage. His second wife was the daughter of a distinguished lawyer who had served as Attorney General of the United States under Jackson and under Van Buren. At the centennial meeting in Philadelphia in 1944 of the American Psychiatric Association three children of that latter marriage were present as invited guests. Each of the two daughters and the son continue to follow the noble example set them by their father in rendering service to mankind.

How influential even a brief letter may be! Dr. Francis T. Stribling was Superintendent of the State Hospital at Staunton in Virginia, opened in 1828. And Dr. Samuel B. Woodward was Superintendent of the State Hospital at Worcester, in Massachusetts. They exchanged letters. Dr. Woodward visited Dr. Stribling. Through correspondence the Thirteen Superintendents of Institutions for the Insane planned to meet in Philadelphia. Dr. Kirkbride was an important member of the Thirteen. By invitation they dined in his splendid home on the grounds of his hospital on October 15, 1844. Plans were perfected on that occasion for a formal meeting in the Jones Hotel in Philadelphia on the next day. At that meeting the American Psychiatric Association was formally organized. It is our oldest national medical organization; its territory embraces also Canada.

Soon Dr. Kirkbride met Dorothea L. Dix. She carried high the torch of insistence that the states provide hospitals for the care of the insane. She aroused the people and the legislative bodies. Dr.

Kirkbride provided plans for the asylum buildings. The mentally sick of our country are indebted to many individuals, many of them wholly unknown to the world, for devoted help; but to no other two do the so-called insane owe so much as to Dorothea Dix and to Dr. Thomas S. Kirkbride. Each gave a life—the all of each—to what today is called the cause of Mental Hygiene.

Every physician, every nurse, every public welfare worker, every lawyer and every judge and every legislator and every governor and every newspaper editor should read *Dr. Kirkbride and His Mental Hospital*. Even though sickness is the theme, the little volume is appealing and entertaining. So delightfully is it written, so naturally and so simply, that when I had read the last word of it I spoke to Dr. Bond for what he had been saying to me for two or three hours. The manner of his writing had begot in me the pleasant delusion that he had been talking to me about those individuals of other days, who live and who will still live on and on and on. If you would think more highly of the human family, read about Kirkbride's. It still functions mightily on West Market Street in Philadelphia—and throughout the world.

Dr. Earl D. Bond is a contribution to our civilization from the pioneer northwest, but for many years he has been one of the nation's best known psychiatrists. During most of those years he has done much of his work in—Kirkbride's—that hospital in which the great man who gave his life to it still lives and moves and has his being. I know of no other physician so alike in spirit to Dr. Kirkbride as Dr. Bond.

## UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

### THE CHEMOTHERAPY OF URINARY TRACT INFECTIONS IN THE ELDERLY

THE GREAT FREQUENCY of urinary tract infections in the elderly makes prompt and proper management important. The local use of mild antiseptic agents, the necessity for constant bladder drainage in the presence of urinary tract obstruction, and the great importance of proper urological intervention in the presence of conditions which preclude success with medical measures alone is here only mentioned.

Hewitt<sup>1</sup> has covered this subject well. His points are emphasized.

The choice of chemotherapeutic agent will be largely determined by the type of bacteria in the urine. Gram-negative bacilli are the most common cause, but gram-positive cocci may also be present

1. Wm. L. Hewitt, Boston, in *Geriatrics*, Nov.-Dec.

in pure culture or in infections with several types of bacteria. Mixed infections occur more frequently than is evident from superficial examination. The presence of *Proteus* sp. is frequently associated with urinary tract calculi and encrusted cystitis. Some strains of *Ps. aeruginosa*, *Staph. aureus* and *albus*, and *Alcaligenes fecalis* also cause a strongly alkaline urine conducive to stone formation.

Diminution in renal efficiency has been noted in elderly patients with no other evidence of renal disease. Usually regulation of the fluid intake is important for insuring an adequate urinary concentration to produce bactericidal action in the urine with simultaneous attention to requirements for adequate fluid balance. A daily fluid intake of 2,500 c.c. will usually accomplish both of these purposes, except when mandelic acid is the drug being employed or in the presence of acute constitutional symptoms and signs, when a greater fluid intake may be desirable. In some instances the status of renal function may govern the success with which the urine can be made strongly acid by administration of ammonium chloride, or alkaline by administration of sodium bicarbonate or sodium or potassium citrate.

Mandelic acid has been largely supplanted by newer, more potent drugs, and this agent is now chiefly useful for the treatment of infections with *Str. fecalis* and occasional infections with *E. coli* which are resistant to sulfonamides and streptomycin. Elixir of ammonium mandelate may be employed, giving eight c.c., four times a day after meals and at bed time, and if this preparation is used, the urine may be sufficiently acid without other acidifying agents.

All of the commonly occurring gram-negative bacilli (*E. coli*, *A. aerogenes*, *Proteus* sp. and *Ps. aeruginosa*) staphylococci, and occasionally *Str. fecalis*, respond to therapy with sulfathiazole or sulfadiazine. A concentration 10 mg. per cent in the urine produces a marked bactericidal effect. Greater concentration against *Proteus* sp. or *Str. fecalis*. Small doses of sulfonamides produce results as good as do larger doses with considerable diminution of the risk of toxicity.

Oral administration may be employed in most cases; when nausea and vomiting are prominent features, sodium salts of sulfathiazole, sulfadiazine, and sulfamerazine intravenously. Infections with mild symptoms respond to 0.25 to 0.5 gm. t.i.d. and 1.0 gm. three or four times a day will prove adequate in almost all cases. If *Proteus* sp. or *Str. fecalis* are present, 1.0 gm. three or four times a day should be employed. Acute constitutional symptoms and signs with or without bacteremia demand 1.0 gm. every four hours. An adequate fluid intake and urinary output (1,500 c.c. per day) should be assured before initiation of sulfonamide treatment. Little advantage is gained by

alkalinizing the urine. The results obtained with sulfonamides will be improved in the presence of *Str. fecalis* if the urine is acid.

All toxic reactions are infrequent with sulfadiazine.

Penicillin is the most potent agent available for the treatment of infections due to staphylococci and streptococci. Staphylococci are important etiological agents in 15 per cent, and streptococci in 3 to 4 per cent of urinary tract infections. Gram-positive cocci are present either as single types of bacteria or with gram-negative bacilli in 20 per cent. Enterococci are resistant to the action of penicillin. Frequently on freeing the urine of gram-positive cocci, with persistence of gram-negative bacilli, following treatment with penicillin in mixed infections, combined therapy with penicillin and sulfonamides or streptomycin, will produce better results in less time.

Infections with gram-positive cocci may have metastatic suppurative complications which may appear as a perinephric abscess or carbuncle of the kidney. Penicillin is effective in the treatment of the bacteremia which precedes these complications and of the localized suppurative phenomena as well. Once the suppurative process is established cure will proceed more rapidly if drainage is instituted.

Most of the gram-negative bacilli encountered in urinary tract infections are susceptible to streptomycin, which administered intramuscularly produces maximum blood levels in two to three hours after injection. The daily dosage of streptomycin usually varies from 1.0 to 4.0 Gm. which must be given intramuscularly. Sufficient to eradicate all gram-negative bacteria except *Ps. aeruginosa*, and in the presence of this organism, or *Str. fecalis*, 2.0 Gm. per day should be employed. When bacteremia is also present a daily dose of 2.0 to 3.0 Gm. should be given at six-hour intervals. Sodium bicarbonate, sodium or potassium citrate in doses of 2.0 Gm. every four hours will usually maintain the urine alkaline. The use of alkali is frequently limited in the elderly by the presence of cardiac failure or renal insufficiency. In the dosage employed and the short duration of treatment usually practiced (7-10 days), the toxic reactions reported in connection with streptomycin therapy occur with great infrequency.

Sulfathiazole and sulfadiazine are effective against almost all of the common bacterial pathogens isolated from the urinary tract. Large doses are unnecessary except against *Str. fecalis* or *Proteus* sp., or when bacteremia coexists. The use of sulfonamide mixtures is a possible method for reduction or renal complications.

Penicillin is the most potent agent for the eradication of gram-positive cocci in the urinary tract, as well as for the treatment of metastatic suppur-



ative complications arising in the urinary tract during infections with these bacteria. In the presence of mixed infection with gram-negative bacilli, combined treatment with sulfonamides or streptomycin is indicated.

Streptomycin is effective against most of the gram-negative bacilli encountered in urinary tract infections. Moderately or highly resistant *Ps. aeruginosa* and *Str. fecalis* are frequently the cause, and are indication for increased dosage. Alkalinization of the urine is an important adjunct to streptomycin therapy.

## THERAPEUTICS

J. F. NASH, M.D., *Editor*, St. Pauls, N. C.

### AEROSOL TREATMENT WITH PENICILLIN AND STREPTOMYCIN

THE EFFECTS of penicillin aerosol on pathogenic organisms found in the sputum of a series of patients<sup>1</sup> showed that culture of the sputum immediately after treatment revealed no pyogenic organisms in the majority of cases. It was also shown that some organisms were not sensitive to penicillin, notably gram-negative organisms, and that the gram-positive organisms of certain patients were only one-fourth to one-half as sensitive as standard gram-positive organisms. The blood levels of penicillin were higher after large doses of the aerosol, and could be increased by instructing the patient to take a deep breath and hold it a few seconds.

It was further shown that:

Penicillin can be found in the blood as early as five minutes after the treatment is begun, but the blood level is not as high as after intramuscular injection. However, the local application of penicillin to the bronchial wall is the aim of the treatment.

Summarizing this doctor's experience: Those with bronchitis, tracheo-bronchitis, and laryngitis following influenza and pneumonia were completely relieved. The majority of the cases of acute sinusitis were markedly relieved, in contrast to those with chronic infections which had little or only partial relief. The cases of bronchiectasis experienced prompt reduction of sputum, and with the exception of a few in which tuberculosis was suspected but could not be proved, were eventually cured.

When lipiodol injections show large saccular formation in a portion of the lung the aerosol method will not cure and recourse must be had to lobectomy. Relief was obtained in 50 per cent of bronchial asthma cases, no cures were observed, and a few were made worse.

Dosage for aerosol treatment consists of the ad-

1. O. L. Veach, Sheridan, Wyoming, in *Rocky Mountain Med. J.*, Oct.

ministration of 25,000 to 50,000 units of penicillin and 1 gm. to 2 gm. of streptomycin either separately or combined, once to five times in 24 hours. Using oxygen to nebulize the solution, a flow of six to eight litres of oxygen per minute is needed, and using compressed air a pressure of 10 to 20 pounds is sufficient. Recently Veach has used compressed air exclusively and he finds it more efficient than the oxygen. In cases of asthma with bronchospasm,  $\frac{1}{2}$  c.c. of 25 per cent solution of neosynephrin previously or together with the penicillin should be inhaled. An ampu of aminophyllin can also be used in the nebulizer for the bronchospasm. In treating acute sinusitis with considerable swelling of the nasal mucosa and blocking of the nostrils, five to ten drops of tuamine or a similar decongestant preparation are added to facilitate the passage of the aerosol mist into the sinuses.

### POINTS AS TO LIVER EXTRACT AND FOLIC ACID

(Editorial Research Dept. *The Medical Times*, Oct.)

Sensitivity to liver extract has been noted in up to 10% of patients: in some a mild local reaction at the site of injection; in others vomiting, urticaria, failure of vision and asthmatic attacks; in a few cases a severe anaphylaxis. Oral ephedrine is effective in the milder cases; injection of 0.5 c.c. of 1:1000 epinephrine hydrochloride controlled the more severe. Whenever liver extract is injected a hypodermic epinephrine solution should be at hand. Reaction is more apt to happen in cases where the time lapse between injections has been longer than usual.

If the allergic reaction occurs the brand of extract should be changed. If the patient is found to be desensitized to the extract by giving 0.1 unit and gradually increasing the dose for two weeks, following the desensitization period the therapeutic doses should be given preferably every two weeks and at no longer intervals than every three weeks.

In patients with a history of allergy a skin test might be done in the very beginning and where a strong reaction is noted epinephrine should be injected with the liver extract. Powdered stomach extract may be given in place of the liver extract in cases of allergy or oral therapy may replace parenteral therapy. The disadvantages of this latter solution are obvious.

The newest member of the vitamin family, folic acid has great value in the treatment of Addisonian anemia, nutritional macrocytic anemia, sprue and the macrocytic anemias of pregnancy and pellagra. Spies urges early diagnosis, by study of the patient and his blood. The patient should eat foods rich in animal proteins for the remainder of his life. Fatigue should be avoided. Some patients respond to daily oral doses of 3 mg., or parenteral doses of 1 mg. Spies suggests 20 mg. daily either orally or by injections. 400 mg. have been given daily for three months with no visible bad effects.

Spies states, however, that until more is known of folic acid, liver extract is the safest and most effective therapeutic agent for the routine treatment of pernicious anemia.

ATABRIN AND AURICULAR FIBRILLATION.—A preliminary report in *Jl. Mt. Sinai Hosp.* (N. Y.), Mar.-Apr., stresses the usefulness of atabrine in auricular fibrillation and paroxysmal supraventricular tachycardias as an alternative to quinidine. There are on record at hospital nine such cases in which atabrine proved to be effective in restoring regular sinus rhythm.

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*As is true of most Medical Journals, all costs of cuts, must be borne by the author.*

## FOR THE 1948 TRI-STATE MEETING

CHARLESTON—FEBRUARY 9TH-10TH

THE PROGRAM for the coming meeting of the Tri-State Medical Association is being built on the plan of clinics and formal essays, which always proves so popular and so informative.

Excellent clinics are being arranged by those skilled in teaching and with all the facilities at hand for best presentation. All the time requested by clinicians was assigned first. You will realize that this time will be well spent.

Places on the program have been taken by members from all three States.

If you have a subject that you regard as of special interest, it is possible that place can be found for you on the program.

We are fortunate in being able to arrange with the Hotel Fort Sumter for accommodations. This comes about only because the meeting will be held between seasons as to tourist demands. You will note that our time of meeting is earlier than usual, which time was chosen in order to come between the heaviest winter tourist season and the period of great demand by those returning from further South.

Dr. James McLeod's death will be a great loss to the meeting and to the Association. Other sons of former presidents will have place on the program, and do their full part in making the meeting one of the most notable in our history.

It is said that every loyal Frenchman in the Provinces hopes to go to Paris when he dies. Few are the persons who have never been to Charleston, who do not wish to go. All those who have been to Charleston wish to go again.

At the time of the Revolution Charleston was a much wealthier and handsomer city than New York. As late as the 1850's the Professor of Medicine in a New York medical college resigned his chair in order to accept the same chair in the Medical College of the State of South Carolina. The Charleston Museum is older than the British Museum and has many priceless items. And, as we all know Charleston has a charm all its own, not the least feature of which is the reputation for gustatory delights which it shares with New Orleans. This reputation is being sustained even in these days of difficulty and scarcity.

Those of you who are contemplating a trip to Florida attend the meeting on the way down. Those already in Florida stop on the way home or fly up for the meeting.

Let nothing interfere with your attending and taking an active part.

Write the Fort Sumter for reservations at the earliest date possible.

A Merry Christmas and a Happy and Prosperous New Year be yours.

## AS TO "UNNECESSARY" OPERATIONS

IN ITS ISSUE for July a popular lay publication carried an article which might seriously lessen the confidence of our people in their surgeons. The article states that 9,000,000 unnecessary operations are performed annually in this country. How the author arrived at that number it would be interesting to know.

The impression conveyed would generally be that these unnecessary operations were performed through greed, carelessness, or inexcusable ignorance on the part of the surgeons. Our surgeons are rated generally as the most skilled and capable in the whole world, a fact that the author of this article admits incidentally. Still no one would deny that in many cases two or more surgeons of the highest class would differ as to the necessity, or even the advisability, of an operation in a given case. In many cases indications are not absolute, but relative.

It is unfortunate that such articles are published widely—unfortunate for the surgeons, but much more unfortunate for the general population. It is enough of an ordeal for a man to be called upon to submit himself, his wife or his child to the hazards of a major surgical operation, when he has the utmost confidence in the integrity and the skill of the surgeon. When this confidence has been disturbed, the plight of the man is wellnigh intolerable.

Fortunately we may be assured that only a very small portion of the population will be deceived by such an attack. Indeed, it may well be that such manifest distortions and exaggerations will cause a larger number to put additional faith in our surgeons, than will have their faith and confidence lessened.

Taking them by and large, the surgeons of our country, certainly of our section of it, are as capable, as diligent and as conscientious as those of any other group, not even excepting those of the ministry.

If the author of this defamatory article and those who published it over the country, to be republished time and again, were to come to need the services of a surgeon, one of these maligners of these well-trained, conscientious gentlemen may depend on it that he will be given the same capable, honest surgical care as is given those who have never expressed any but the most exalted opinions of surgeons. For such is the spirit of the ninety-and-nine of them.

## ABOUT NURSING AND NURSES

IN THE PAST ten days there has come to this desk disturbing news about the nursing situation. When nurses in old hospitals with long records of faithful health service serve joint notice that they

will walk out on a certain day unless certain demands are complied with by that day, all those concerned with the care of the sick must be greatly disturbed and distressed. Right along with such items, come letters from the American Nurses Association which increase our disquietude and apprehension.

The Executive Secretary of the Association offers means of solution of the problem. She says salaries should be increased, working hours reduced, social insurance should be provided, sick leave should be granted and vacation with pay, and nurses should have more recognition of professional and personal status.

Locally our nurses are being paid \$9 for an eight-hour day. Many seriously ill patients have three special nurses. Only a very small fraction of our population can pay \$27 daily for this one feature of care in illness. The Executive Secretary says this rate of pay must be increased.

Very few persons outside the labor unions believe that 40 hours for being on the job constitutes a week's work. The Executive Secretary assails the plan put forward by the American Medical Association of utilizing practical nursing for certain aspects of nursing care, which indeed might be done entirely safely and satisfactorily by maids. Few there be who would agree with this Executive Secretary that it would be "extremely dangerous and detrimental to the patient's welfare" to have someone other than a registered nurse make the patient's bed, bring in and take out trays and flowers, and perform a great many other of the services which meet the vast majority of the needs of a patient, leaving it to the registered nurse to perform really professional services to a number of patients. Few believe that any group can obtain "more recognition of professional and personal status" by adopting the methods of the labor unions.

This journal has believed and maintained with all its strength that Socialized Medicine would never come in this country, certainly not in our time. Recent developments in the nursing situation have seriously shaken our confidence that this tragic change would not be brought about.

## STATE MEDICINE'S HANDLING OF PATIENTS WITH CANCER OF THE STOMACH

THE MOST DAMNING EVIDENCE YET PRESENTED  
AGAINST SOCIALIZED MEDICINE

FOLLOWING is a Letter to the Editor of the *British Medical Journal* of November 22nd:

"A.B. is referred by his medical attendant to a particular consultant at hospital. A diagnosis of early carcinoma of the stomach is made and confirmed. The patient is advised to have an operation,

to which he agrees, and he is put on the waiting list for admission. Presumably the consultant has entered into a contract with the patient and his doctor to carry out the treatment. The patient is not admitted for six or even 12 months and the growth becomes inoperable.

Is this the responsibility of the consultant or the committee of management of the hospital? Should the law decree that the onus is on the committee of management, is it not incumbent upon the committee to review the number of patients on their waiting list and to advertise or otherwise make known to all concerned what prospects they envisage of fulfilling the contracts to which they are party?"

The Editor's reply:

"Our Legal Correspondent writes: Any cause of action must be founded either on contract (agreement between the parties) or tort (civil wrong; in this case failure to use proper care). In each case the burden of proof is upon the patient. To succeed in an action for breach of contract he must show that an agreement, express or implied, existed to admit him to hospital or to operate on him, or both, while the growth was still operable. If he contracted for operation with the consultant, or for admission with the hospital, on this understanding and could prove it, he might have a chance of success. It is, however, hardly conceivable that either a consultant or a hospital would undertake such an obligation in these days of shortage of beds and would fail to tell the patient that he must wait his turn. Neither the consultant nor the hospital is required to do the impossible. . . . If he did succeed against the hospital, the committee would certainly be wise to make sure in the future that they could not be taken to promise anything they could not perform regarding the interval of time between the acceptance of a patient and his admittance."

Hard to believe isn't it?

Under our system of meeting the health needs of the people it could never happen that 24 hours would intervene between the consent of such a patient and his admission to hospital. A bed would be put in a hall, or a sun parlor, or an interne would give up his bed if necessary.

"Wait his turn?" Does this Socialistic "committee" recognize no such thing as an emergency in which delay of a day may, and delay of weeks or months will certainly, cost the patient his life?

This journal has never favored the socialization of medical care. It has done all in its power in opposition to the movement. But it has never accused it of such an atrocity as is calmly admitted by the Editor of the *British Medical Journal*, as a matter of course, in Britain under a Socialist Government that was voted in by voting out the

Churchill Government.

Unless our lawmakers have lost all feeling as well as all reason they will never vote for such a system, once they know of such practices as this.

Let us see that they know.

### Dr. Frank Alexander Sharpe

WHILE HE slept peacefully in his home in a suburb of Greensboro, at some time in the night of November 20th, Dr. Frank Sharpe's life came to its close. The coroner ascribed the death to that arch enemy of doctors, coronary occlusion.

Dr. Sharpe was born in Guilford County. He was graduated from Davidson College and the University of Virginia, and had special training at the Mayo Clinic before beginning practice in 1921. He was with the Army Medical Corps in World War I.

His affiliations included membership in the American Medical Association, the South Atlantic Association of Obstetricians and Gynecologists, and the American College of Surgeons. For four years he was a member of the Greensboro Board of Health.

He was a former president of the County Medical Society, a member of Greensboro Academy of Medicine, a director of Wesley Long Hospital, a governor's board member of the Merchants and Manufacturers Club, a member of First Presbyterian Church, of which he had been a deacon for 13 years.

At the time of his death Dr. Sharpe was serving a term as president of the Medical Society of the State of North Carolina.

His city's newspapers pay glowing tributes.

"Born and reared in Guilford County, Dr. Sharpe was, indeed, a favorite son, one who enjoyed the confidence, respect and admiration of legions of citizens because of his great professional abilities, his engaging personality and his active interest in the betterment of his city, county and state. All of his life—which was an extremely active one—was spent here, excepting those years when he was away in college and medical school and in the service of his country in World War I.

"Beginning his professional career here in 1921, Dr. Sharpe, who was only 58 years old when he died, soon built up a large practice and the well-deserved reputation of being one of the country's best doctors. His practice continued to grow and expand through the years, but he always found time to play an active and constructive role in public health and civic affairs and to take part in the activities of his church.

"Far-sighted and progressive, Dr. Sharpe always kept in the van of developments and improvements in medical science. The betterment and uplift of health conditions in his city, county and state was

the cause nearest and dearest to Dr. Sharpe's heart. He generously contributed time and work to this cause, and his labors yielded abundantly.

"The *Record*, along with many thousands, has lost an old and valued friend in the passing of this good and capable man who exemplified the best and finest traditions in the ancient and noble profession of healing."

"Dr. Sharpe's own record of humanitarian service in Greensboro, where he practiced his profession continuously since 1921, is too well known and speaks too eloquently for the *Daily News* to essay any supererogatory praise. Tribute wells up from those to whom he ministered and will continue to well for years to come from Greensburgers whom he brought into the world. It is meet to add that his personal attributes won and held a large host of friends outside the realm of his professional activities as he went in and out among his fellow men and gave of his leadership in other fields."

Dr. Sharpe's many honors came to him unsought, and as the inevitable result of his exceptional merit.

This journal believes that a lesson should be learned from the early cutting off of this immensely valuable life.

At a meeting of the Seventh District Medical Society, held in Charlotte November 5th, Dr. Sharpe made the principal address, preliminary to which he told us how he had spent practically every evening for the past two weeks in attending medical meetings at widely separated places in the State. In recent years we doctors of North Carolina have thought we could hardly hold a meeting without the presence and participation of the president of the State Medical Society. This journal believes these unreasonable demands on the strength of our presidents has shortened the life of more than one of them. It hopes these demands will be brought within the bounds of reason, which means reduction by at least three-fourths.

### Doctor James McLeod

For the meeting of the Tri-State Medical Association which, but for war, would have been held in Columbia in 1945, the president for that year, Dr. Karl B. Pace, prepared an address on "Care of the Doctor's Heart." That address was devoted largely to impressing on the members the high death rate among doctors from heart disease, and the high rank of rest as heart medicine.

For the meeting of the Tri-State Medical Association to be held in Charleston in 1948, Dr. James McLeod was to speak on "Medicine in America." He wrote that he would "deal with the accomplishments and responsibilities of the profession."

On the 9th of December, Dr. McLeod died of occlusion of a coronary artery, in the hospital at Florence, S. C., which bears the family name.

Dr. James McLeod was chief surgeon and superintendent of the McLeod Infirmary, a superb hospital of a hundred beds established by his father, Dr. Frank McLeod. In addition, Dr. James took a leading part in every movement toward better medicine and better citizenship. He was wholeheartedly committed to the belief that doctors should take an active part in politics. In the latest contest for the Governorship of his State he ran a close second to the winner. He was being urged to make the race for a U. S. Senatorship.

One would be rash to say positively that, had Dr. McLeod heeded Dr. Pace's warning, he would have saved himself for many more years of greatest usefulness; but it is as certain that this great doctor, dead at fifty, worked far beyond the capacity of most of us, as it is that his death makes a vacancy which can not be filled.

#### EPINEPHRINE IN CARDIAC RESUSCITATION (H. K. Beecher & R. R. Linton, Boston, in *Jl. A. M. A.*, Sept. 13th)

Twice, after periods of cardiac standstill of 30 to 12 minutes, respectively, epinephrine produced resuscitation of the heart although needle pricks had failed to do so. In this case the epinephrine appeared to be the effective agent on two occasions after repeated needle pricks had failed.

When epinephrine is employed in cardiac resuscitation, doses that seem to be dangerously large are often used, with the hazard of production of ventricular fibrillation. In adults who have impaired hearts (and any heart in standstill is at least acutely impaired) no more than 0.2 to 0.3 c.c. of 1:1,000 solution of epinephrine hydrochloride ought to be used, and this should be diluted 10 times before injection into the right auricle. (This may be introduced by way of the right jugular vein). Accompanying massage of the heart is probably of great importance. Oxygenation should be maintained by artificial respiration with an oxygen-rich atmosphere, and the falling b. p. should be supported by transfusion.

#### TRIPLENNAMINE "PYRIBENZAMINE" OINTMENT FOR THE RELIEF OF ITCHING (S. M. Feinberg & T. B. Bernstein, Chicago, in *J. A. M. A.*, July 5th)

The palliative benefit produced by the oral administration of triplennamine hydrochloride ("pyribenzamine hydrochloride" N. N. R.) and other antihistaminic drugs on the symptoms of many allergic manifestations has now been demonstrated. In the dermatoses the effect of these drugs has been to reduce the edema of the lesions, but above all they have been effective in the relief of the pruritus. There is some evidence that even pruritus not allergic, such as that due to icterus or to diabetes has been relieved by these drugs.

The foregoing considerations led us to hope that topical applications of these drugs might be of value in itching dermatoses, particularly atopic dermatitis. Our first preparations were aqueous solutions of the drugs; later, mixtures containing vegetable gums were used.

Triplennamine ("pyribenzamine") hydrochloride in a 2 per cent concentration in ointment form applied locally has been found to give relief to the majority of patients with itching dermatoses, particularly atopic dermatitis and pruritus ani.

## NEWS

### SEABOARD MEDICAL ASSOCIATION OFFICERS

Dr. Zack D. Owens, of Elizabeth City, was elected president of the Seaboard Medical Association of Virginia and North Carolina at its 52nd annual meeting at Cavalier Hotel, Virginia Beach, Dec. 3d and 4th. Dr. Clarence Porter Jones, of Newport News, was re-elected secretary-treasurer.

Other officers named are Dr. Bryan Grinnan, of Norfolk, first vice-president; Dr. John A. Payne, of Sunbury, N. C., second vice-president; Dr. Holmes Chapman, of Suffolk, third vice-president, and Dr. T. W. Blanchard, of Hobbsville, N. C., fourth vice-president.

Elizabeth City was selected for the 1948 meeting of the association.

### WAYNE COUNTY (N. C.) MEDICAL SOCIETY

Dr. Milton S. Clark was elected president of the Wayne County Medical Society at a meeting at Hotel Goldsboro Friday evening. Dr. Clark succeeds Dr. James W. Rose, of Pikeville. Other officers elected include Dr. Charles Powell, Goldsboro, vice-president, and Dr. A. G. Woodard, Goldsboro, secretary-treasurer.

### CATAWBA VALLEY MEDICAL SOCIETY

Dr. L. A. Crowell, Jr., of Lincolnton, N. C., was elected president, and Dr. E. H. Ellinwood, of Hickory, reelected secretary of the society at its meeting at Lenoir, the evening of December 10th.

### NORTH CAROLINA PUBLIC HEALTH ASSOCIATION MEETING

This meeting was held at the Hotel Charlotte, November 3d-5th, and was presided over by Dr. M. B. Bethel, Charlotte Health Officer.

Dr. Frank A. Sharpe, President of the Medical Society of the State of North Carolina, extended greetings in behalf of the State Medical Society. Dr. Sharpe emphasized the importance of close cooperation between Public Health and private practice. His address was warmly received.

Some of the most important topics discussed were: The medical school in preventive medicine, milk production and milk sanitation, communicable disease control, tuberculosis vaccination and tuberculosis treatment with streptomycin.

The new officers are H. W. Stevens, M.D., Graham, President; E. A. Branch, D.D.S., Raleigh, Vice-President; Harold Parker, Secretary-Treasurer, Winston-Salem.

There was an attendance of something over 400.

### DR. JOHNS EULOGIZES DR. JOHNSTON

Dr. Frank S. Johns, of Richmond, as president of the Southern Surgical Association, gave the president's annual address at the meeting of the association at Hollywood Beach, Fla., the evening of Dec. 3d. His address, entitled "A Noble Memory," was a tribute to Dr. George Ben Johnston, of Richmond, one of the founders of the Association and its president just 50 years ago.

Other speakers at the convention from Richmond include Dr. Carrington Williams, Dr. Lewis H. Boshier, Jr., Dr. A. Stephens Graham and Dr. W. Lowndes Peple.

Five Richmonders have served as president of the Association since its founding. They are Dr. Hunter McGuire, Dr. Johnston, Dr. Lewis Boshier, Dr. Stuart McGuire and Dr. Johns.

### MAYO CLINIC MEMBER SPEAKS ON YELLOW FEVER CONQUEST

Dr. Phillip S. Hensch, of the Mayo Clinic, spoke on November 17th before the Alpha Omega Alpha honorary medical society at the University of Virginia, gave new details about the conquest of yellow fever by Dr. Walter Reed, and his coworkers.

### DR. ROBERTSON BECOMES PRESIDENT

Dr. J. F. Robertson, of Wilmington, has succeeded Dr. Frank A. Sharpe, Greensboro, deceased, as president of the Medical Society of the State of North Carolina.

As president-designate, to which position he was elected by the society last June, Dr. Robertson, according to the by-laws of the organization, automatically assumed the presidency upon the death of Dr. Sharpe. The Wilmington surgeon will serve out Dr. Sharpe's term and begin his own term as president in May of 1948, it was announced.

DR. JAMES GARNETT BRUCE, native of Culpeper County, Va., has been added to the staff of the Gordonsville (Va.) Community Hospital. Dr. Bruce is a graduate of Culpeper High School, Hampden-Sydney College and the University of Virginia Medical School.

DR. CAREY T. DURANT, who has been in medical practice at Tryon, N. C., for three years, is leaving about December 15th to enter practice at Hemingway, S. C.

DR. AUSTIN WOODY, returning from service with the Armed Services, is resuming practice at Tryon, N. C.

DR. ANDREW BLAIR is president of the medical staff of Presbyterian Hospital, Charlotte, for 1948; Dr. W. Marvin Scruggs, vice-president; and Dr. Jerome B. Hamer succeeds himself as secretary.

DR. WINGATE M. JOHNSON, of Winston-Salem, is one of the two physicians to represent the A. M. A. at the National Conference on Family Life to be held at the White House, May 6th to 8th.

### MARRIED

Dr. Frank R. Brown and Miss Mary Elizabeth King both of Greensboro, N. C., were married on December 6th.

Dr. Paul Bernhardt Toms, of Salisbury, N. C., and Miss Mabel Bassett Hooker, of Martinsville, Virginia, were married on December 6th.

Miss Margaret Elizabeth Ewell, formerly of Parksley, Accomac County, Virginia, who for the past several years has been making her home in Richmond, was married November 29th to Dr. Robert H. Courtney, of Richmond.

Dr. Courtney, a native of Lenoir, N. C., is professor of ophthalmology in the Medical College of Virginia.

Dr. Henry Carl Messerschmidt, Jr., of Richmond, and Miss Betty Rowland Fiddler, of Burlington, North Carolina, were married on November 15th.

### DIED

Dr. William Pepper, 73, former president of the Association of American Medical Colleges, died in University of Pennsylvania Hospital, Philadelphia, December 4th, of coronary thrombosis, after a brief illness.

Dr. Pepper was dean emeritus of the School of Medicine of the University of Pennsylvania and a former member of the Council on Medical Education of the American Medical Association. He retired two years ago.

Dr. Loring Hammer, 63, a graduate of the Medical College of Virginia, 1909, practicing physician at Luray, Va., from 1909 until he was taken ill six years ago, died November 23d in a Luray hospital, where he had been a patient for more than two years.

Dr. Elizabeth French Collins Whitehead, 73, Woman's Medical College, Philadelphia, 1899, pioneer woman physician, died at the home of her son, William C. Whitehead, Ingleside, Va., Nov. 27th. She had been in ill health for two years.

Dr. Frank A. Sharpe, president of the Medical Society of the State of North Carolina, died at his home at Greensboro in the night of November 20th. The body was found in bed the next morning. Dr W. W. Harvey, county coroner, attributed death to coronary occlusion.

Dr. Louis Storrow Greene, 74, died at his home in Washington, November 12th.

He has been on the board of the Episcopal Eye, Ear and Throat Hospital for the past 50 years, chief of staff of the eye service for the last 20 years. He also was a past president of the American Ophthalmological Society and the American College of Surgeons.

Dr. Greene was a native of Columbus, Ga., and a graduate of the University of Virginia.

Dr. Charles Cheves Haskell, 67, well-known Richmond physician, and since 1937 president of the Charles C. Haskell Company, died November 12th at his home after a brief illness.

Dr. Haskell was born in Columbia, S. C., and was a grandson of General Wade Hampton, CSA. He was graduated in 1904 from the University of Virginia, and received his M.D. degree from Harvard University in 1908.

He located in Richmond in 1913, where he practiced medicine for a brief time before becoming associated with the Department of Physiology and Pharmacology of the Medical College of Virginia, of which department he was later made professor and head.

In 1937, he organized a group in Richmond and founded the Charles C. Haskell Company of which he continued to be president until his death.

#### *Final Edition of "Courage and Devotion Beyond the Call of Duty"*

The final edition of the book, "Courage and Devotion Beyond the Call of Duty," which is composed of official awards and citations received by U. S. medical officers during World War II, is now being prepared by Mead Johnson & Company, Evansville, Indiana.

Any physician, who has not already done so, should write to Mead Johnson & Co. advising them of the awards he has received and also send a typewritten or photostatic copy of his citations. The following additional information would be of assistance in compiling the material for this book: Present rank or rank at time of discharge. Branch of service. From what school and in what year M.D. degree was received. Date of entry into the service.

#### *"War or No War, Depression or No Depression,"*

in good times and in bad, Mead Johnson & Company are keeping the faith with the medical profession. Mead Products are not advertised to the public.

#### NEOSTIGMINE FOR MYASTHENIA GRAVIS

(R. S. Schwab & W. P. Chapman, Boston, in *Med. Clin. N. Amer.*, 31, 1947)

Neostigmine is the most effective drug known for diagnosis and treatment of myasthenia gravis. Neostigmine

methylsulfate is available in ampules, and neostigmine bromide in 15-mg. tablets or aqueous solution. A tablet taken orally has the effect of 1 mg. of methylsulfate injected.

A special ampule for diagnosing myasthenia gravis contains 1.5 mg. of neostigmine methylsulfate and 0.6 mg. of atropine sulfate in 1 c.c. of sterile water. Ptosis, dysphagia, strength of grip and voice, ability to chew, and stair climbing or other exercise are tested before and 15 or 20 minutes after intramuscular injection.

Average daily dose for myasthenia gravis is ten 15-mg. tablets. Large doses are dangerous but 25 to 30 tablets have been given for severe involvement. With constant supervision, oral medication is satisfactory in 85% of cases. The effect of neostigmine is augmented by ephedrine sulfate in doses of 24 mg. t.i.d.; guanidine hydrochloride, 65 to 125 mg. three or four times daily; and potassium chloride or gluconate, 500 mg. three times a day. The drug has no specific effect in other neuromuscular disorders.

Abdominal distention without an obstructive or perforating element and without peritonitis may be prevented or relieved by neostigmine injected subcutaneously in a 1:4000 solution—six doses of 1 c.c. at 2-hour intervals. The method is useful after operations or with chronic disease when gastric suction is not available.

Postoperative urinary retention is similarly corrected. The drug aids expulsion of ureteral calculi if the ureter is not constricted below the stone.

#### CRAMP AND SALT BALANCE

(Sir Arthur J. Hall, Sheffield, Eng., in *Lancet*, 253, 1947)

Persons eating salt-free food may be particularly susceptible to attacks of cramp. Salt depletion from profuse sweating is known to cause muscular spasm.

Three patients who had severe and frequent cramps were found to have rigidly curtailed their salt intake—one because of a doctor's order, the others through preference. Within a week after addition of salt to food the first patient was completely free of cramps. Some salt in their diets and nightly capsules containing 5 to 10 gr. of bicarbonate of soda reduced or completely abolished occurrence of cramps with the others. When salt intake was again reduced, the cramp recurred.

## CHUCKLES

#### WISE OLD BEN FRANKLIN

Journeying by night on horseback, Benjamin Franklin reined his horse before a small wayside inn and went inside to warm himself. But to his disappointment and dismay, he found a crowd of inconsiderate loungers shutting him off from the fire.

"Half a peck of oysters in the shell for my horse," he called out in a loud voice.

When the astonished inn-keeper went out to obey this starting order, the entire assemblage—save Franklin—rushed out to see a horse eat oysters.

Soon the people returned and told Franklin that his horse had refused to consume the bivalves.

"Then," said Franklin, now settled before the cheerful fire, "bring them in and watch me eat them."

#### PROPOSITION INTERESTING

Clerk: Now see here, little girl, I can't spend the whole day showing you penny toys. Do you want the earth with a little red fence around it for one cent?

Little Girl: Let me see it.

From a weekly newspaper: "Due to the shortage of paper, a number of births will be postponed until next week."

## BOOKS

**SURGICAL DISORDERS OF THE CHEST**, Diagnosis and Treatment, by J. K. DONALDSON, B.S., M.D., F.A.C.S. (Lt. Col., A. U. S.), Associate Professor of Surgery and in Charge of Thoracic Surgery, University of Arkansas School of Medicine. Second edition, thoroughly revised with 146 illustrations and 2 color plates. *Lea & Febiger*, Philadelphia, 1947. \$8.50.

The rapid development and extension of surgery of the chest makes it essential that everything published on the subject be revised frequently. Part I is devoted to inflammations, tumors, congenital anomalies of the thoracic wall; and thoracic injuries. Part II covers non-tuberculous intrathoracic infections; pleurisy including tuberculous empyema; pulmonary embolism and infarction; intrathoracic tumors and congenital abnormalities. Part III deals with surgical therapy in pulmonary tuberculosis; anesthesia and prevention and treatment of post-operative pulmonary complications; resuscitation and inhalation therapy.

Thus it will be seen that here one may find an exposition of the best in diagnosis and treatment of surgical conditions that long have been amenable to the skill of the surgeon, as well as the latest in the surgical treatment of pulmonary tuberculosis, of lung abscess and of lung cancer.

**HANDBOOK ON FRACTURES**, by DUNCAN EYE, JR., M.D., F.A.C.S., Surgeon-in-Chief, Nashville, Chattanooga & St. Louis Railroad; Associate Professor of Surgery, Vanderbilt University School of Medicine; Member the Committee on Fractures of the American College of Surgeons; in collaboration with TRIMBLE SHARPER, A.B., M.D., Attending Surgeon, St. Thomas Hospital, Nashville. Illustrated. *The C. F. Mosby Company*, 3207 Washington Blvd., St. Louis 3, 1947. \$5.

There is a minimum of signs and symptoms and a maximum of details of treatment. It is assumed that diagnosis will be made and treatment effected under the guidance of x-rays. Much emphasis is placed on individualization of treatment. The book represents the lessons of 40 years of experience of a large practice with an exceptionally large component of fracture work. It is admitted that in many cases there are several good methods of treatment, but, to avoid confusion and unnecessary prolongation of description, only the method which the author judges to be best is described. It is remarkable how well the subject of fractures is covered in a book of 250 pages.

**A PRIMER OF CARDIOLOGY**, by GEORGE D. BURCH, M.D., F.A.C.P., Associate Professor of Medicine, Tulane University School of Medicine; Senior Visiting Physician, Charity Hospital, New Orleans; and PAUL REASER, M.D., Instructor in Medicine, Tulane University School of Medicine. With 203 illustrations. *Lea & Febiger*, Philadelphia, 1947. \$4.50.

This book is devoted largely to the laying down of fundamental principles for the establishment of

a foundation for further study of heart disease. Principal emphasis is on problems of most practical application in medical practice. It is a remarkably clear text for the use of medical students and physicians being introduced to the study of cardiology. Controversial subjects are mentioned briefly without discussion. To avoid the necessity of turning pages some illustrations are repeated several times. It is an excellent primer for cardiology. Indeed it is a good deal more than that.

**DISEASES OF THE NOSE, THROAT AND EAR**, by WM. L. BALLENGER, M.D., F.A.C.S., Late Professor, School of Medicine, University of Illinois, Chicago; and H. C. BALLENGER, M.D., F.A.C.S., Associate Professor and Acting Chairman of the Department of Otolaryngology, Northwestern University School of Medicine, Chicago, assisted by J. J. BALLENGER, B.S., M.D., Research Fellow in Otolaryngology, Northwestern University School of Medicine, Chicago. Ninth edition, thoroughly revised, with 597 illustrations and 16 plates. *Lea & Febiger*, Philadelphia, 1947. \$12.50.

This new edition of this long-established standard work brings the text fully up to date. The field of otolaryngology is covered thoroughly as to diagnosis and medical and surgical treatment. There is a new chapter on headaches and neuralgias of the face and head. Cosmetic surgery of the nose is described and the various steps well illustrated. The final section is devoted to bronchoscopy, direct laryngoscopy, esophagoscopy and gastroscopy.

With the collaboration of a number of the most prominent specialists in this field, the authors have produced a book for the specialist and the general practitioner which will well sustain the reputation that previous editions have made over the many years.

**THE FOOT AND ANKLE: Their Injuries, Diseases, Deformities and Disabilities**, by PHILIP LEWIN, M.D., F.A.C.S., Associate Professor of Bone and Joint Surgery and Acting Head of Department, Northwestern University Medical School; Professor of Orthopedic Surgery, Post-Graduate Medical School of Cook County Hospital, Chicago. With 389 illustrations. Third edition, thoroughly revised. *Lea & Febiger*, Philadelphia, 1947. \$11.

It seems odd, on first blush, that a book of over 800 pages would be written on the foot and ankle. Light is shed on the undertaking by the author's statement that Kanavel, who wrote a great book on the hand, and under whom the author of the volume under review served, advised this author to "write a book that will tell the general practitioner what to do for the common conditions that occur in and around the foot."

The popularity of previous editions is the best proof of the fine way in which this direction was carried out. This, the third edition, brings up to date this telling of the general practitioner what to do for pathologic conditions of this important member and joint.



**UNIPOLAR LEAD ELECTROCARDIOGRAPHY**, Including Standard Leads, Unipolar Extremity Leads and Multiple Unipolar Precordial Leads, by EMANUEL GOLDBERGER, B.S., M.D., Cardiographer and Associate Physician, Lincoln Hospital, New York, Clinical Lecturer in Medicine, Columbia University. With 88 illustrations. *Lea & Febiger*, Philadelphia. 1947. \$4.

In this book electrocardiographic patterns are described primarily in terms of unipolar leads, because the author conceives that when unipolar leads are used the patterns can be explained in terms of simple physiological principles. Further, the author believes that all leads can be interpreted in terms of these basic unipolar lead patterns.

Advantages claimed for unipolar leads are represented to be many. This monograph is largely made up of material used in the course in advanced electrocardiography given by the author under the auspices of Columbia University Faculty of Medicine.

**PHENMEROL, AN ALL-PURPOSE GERMICIDE**  
(*Therapeutic Notes*, Parke, Davis & Co., October)

Phenmerol Chloride is now available for clinical use in 4 forms:

1. Tincture Phenmerol Chloride, 1:500, a tincture (65% alcohol and 10% acetone) which dries rapidly on the skin. For preparation of the skin preoperatively, the area is washed with tincture green soap, thoroughly rinsed with sterile water; 70% alcohol is then applied, followed by tincture phenmerol chloride. It is highly effective as a skin antiseptic for use in obstetrics and surgery; its bacteriostatic action lasting longer than the average surgical procedure.

2. Solution Phenmerol Chloride, 1:1000, as a vaginal douche, as supplied or diluted with 5 to 10 parts of water; for instillation into, or irrigation of, the urethra and urinary bladder, undiluted or diluted with 10 to 20 parts of warm water; full strength by swab or spray in acute tonsillitis and pharyngitis, in the nose by spray or pack, and in the mouth and throat as a wash or gargle dilute with 4 parts of water; as a wet dressing; undiluted or diluted with 2 to 5 parts of water.

3. Phenmerol Topical (3% Phenmerol Chloride), highly effective antiseptic and fungicide in minor surgery and first-aid work an aqueous antiseptic superior to tincture iodine for ability to kill staphylococci and streptococci. Germicidal potency and tissue tolerance render phenmerol topical ideal for routine use in first-aid care and later treatment of minor injuries, and treatment of bacterial and fungus infections of the skin. Almost no smarting or stinging follows application to extensive lacerations and abrasions.

4. Phenmerol Chloride, Ophthalmic, a colorless, buffered 1:5000 sol. of Phenmerol in a 2% sol. of boric acid, is well tolerated by the delicate mucous membranes of the eye. Highly effective in operative procedures, ophthalmic accident, sty, trichiasis, ectropion, conjunctivitis, ulcerations of the cornea—4 or 5 drops instilled into the conjunctival sac every two to four hours—or as a wet pack, or as a collyrium.

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